

THE CANADIAN GREAT LAKES BASIN

INTAKE OUTFALL ATLAS

(8 Volume Set)

Volume 4

AUGUST 1990

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MOE



Ontario

Environment
Environnement

Jim Bradley, Minister/ministre

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CANADIAN GREAT LAKES BASIN

INTAKE - OUTFALL ATLAS

VOLUME 4

ST. CLAIR RIVER/LAKE ST. CLAIR/DETROIT RIVER

by
Kleinfeldt Consultants Limited
AUGUST 1990

M. Griffiths (ed)

Water Resources Branch
ONTARIO MINISTRY OF THE ENVIRONMENT

1990, Her Majesty the Queen in Right of Ontario

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CANADIAN GREAT LAKES BASIN INTAKE/OUTFALL ATLAS

GUIDE TO USE

INTRODUCTION

The Canadian Great Lakes Basin Intake/Outfall Atlas will be used by various public organizations as well as private concerns for water quality assessment studies, pollution control plans, investigation of bacterial pollution problems at bathing beaches and in the formulation of long range management strategies.

The Canadian Great Lakes Basin, Intake Outfall Atlas is composed of eight separate volumes as listed below:

- Volume 1 - Lake Superior
- Volume 2 - St. Marys River
- Volume 3 - Lake Huron/Georgian Bay
- Volume 4 - St. Clair River/Lake St. Clair/
Detroit River
- Volume 5 - Lake Erie
- Volume 6 - Niagara River/Welland Canal/Welland River
- Volume 7 - Lake Ontario
- Volume 8 - St. Lawrence River

For the purposes of this project, questionnaires were sent to appropriate individuals at public and private intake and outfall facilities. Facilities may fall into any one of the industrial categories, or it can be a municipally or provincially operated Water Treatment Plant (WTP) or a Sewage Treatment Plant (STP). Municipalities were also contacted for information regarding various outfalls such as storm, combined, and sanitary sewers that discharge to the Great Lakes System or tributary stream. The bulk of the data were received by Kleinfeldt between December 1986 and June 1987.

A list of Ontario municipal, provincial and private industrial operations was developed using several sources including: IMIS and UMIS listings, from the Water and Wastewater Management Section, Regional Abatement and Utility Officers, Reports from the International Joint Commission, earlier versions of this Atlas, reports and discussions with various individuals. In order to be included in this Atlas identified operations must either discharge effluent (including cooling water and stormwater) to the Canadian Great Lakes or draw water from the the system. These operations must be located within 2 kilometres of the Great Lakes System shoreline. The Great Lakes System includes all Great Lakes within Canadian boundaries as well as the major Interconnecting Channels.

A report summarizing discharging operations and receiving water bodies has been prepared and submitted, under separate cover, to the Great Lakes Section.

USING THE ATLAS

I General Layout

The Atlas begins with Volume 1 representing Lake Superior and ends with Volume 8, representing the St. Lawrence River, thus following a general west to east flow. Mapping of the Great Lakes shoreline is accomplished by using continuous and overlapping hydrographic charts and topographic maps.

Each map contains a legend of symbols for quick reference, an orientation arrow indicating the north direction and a bar scale. When working with each map, check the scale as it may vary between maps.

II Legends

Legends provided on each map are self-explanatory. In the case of shore based effluent pipes, including sewer system outfalls, the arrowhead indicating outfall location is on the land side of shoreline. Similarly shore based intakes have their location indicators on the water side of the shoreline. Thus, location indicators also illustrate direction of flow through any given pipe. In some situations, because of pipe length and available map scale, offshore effluent and water intake pipes have been illustrated as shore based, however, consultation with the facing data page will give exact data on length of pipe from shore.

III Maps

Each map is numbered and is accompanied by a data page. Information on industrial, provincial or municipal intake or outfall structures within a map's borders is detailed on the data page. All intakes and outfalls, (excluding sewer system outfalls) have a numerical designation located as close to the actual structure as possible. These numerical designations begin at one (1) for each map, and relate to the "Structure Number" category on each data page. Although limited to descriptions of seven (7) structures per page there can be more than one data page relating to a simple map.

IV General

If a particular structure appears in the area of overlap between two maps the structure will be presented on one map only. However, where there is map duplication (i.e. between volumes) the structures will be mapped and data presented in both volumes.

Water and sewage treatment operations are listed by plant name. The Atlas user should refer to the location category in the data tables for identification of plant location. The abbreviations WPCP and STP describe sewage treatment operations and are assigned to an operation based on MOE designations.

V Lists of Operations:

In order to assist the user in locating the required information on a particular operation, we recommend that the user begin with our lists given below. Please note, these lists do not include municipal jurisdictions that provided sewer/drainage system information only.

Table 1: Listing of all operations that have major intake/outfall structures mapped and tabulated in the Atlas. Does not include municipal sewer/drainage outfalls.

Table 2: Listing of all operations within a given volume and a corresponding index.

Table 3: Listing of industrial operations not responding to the questionnaire (Information was subsequently supplied by the MOE).

VI Abbreviations:

Before using the Atlas it is recommended the user be familiar with the abbreviations presented in Table 4.

VII Explanation of Data Tables:

Table 5 provides a brief explanation of each information category to improve the clarity for the user.

Acknowledgments

The Canadian Great Lakes Basin Intake/Outfall Atlas was compiled by Kleinfeldt Consultants Limited, and with the assistance of the Great Lakes Section of the Ontario Ministry of the Environment's Water Resources Branch.

Kleinfeldt Consultants wishes to thank Mrs. Marta Griffiths of the MOE's Great Lakes Section for her time and patience exhibited throughout the course of this project.

We also acknowledge the efforts of Ministry of the Environment personnel, in the Great Lakes Section, as well as, Regional and District Offices who took the time and made the effort to review the data and maps contained in the Atlas, and provided comments, suggestions and additional information. Their efforts have allowed us to improve the document and hence the overall utility of the Atlas.

Kleinfeldt Consultants would also like to take this opportunity to thank the individuals in the ministry, local municipality and industry that provided information on 500 plus operations included in this Atlas. Without the cooperation and timely responses from the majority of contacts, this project would not have been a success.

Disclaimer

The information contained in this Atlas is as accurate as the information supplied in the completed and returned questionnaires. Due to the nature of the data collection, Kleinfeldt Consultants Limited is not responsible for erroneous information supplied by any one of the 400 plus operations.

Table 1

ALL OPERATIONS INCLUDED IN THE ATLAS

Lake Superior	St. Marys River	Lake Huron/Georgian Bay	St. Clair System	Lake Erie	Welland Canal/Niagara R.	Lake Ontario	St. Lawrence River
Abitibi Price Inc.	Algoma Steel Corp.	Blind River STP	Amherstburg WPCP	Amherstburg WPCP	Anger Ave. WPCP	Ajax WTP	BCL
Abitibi Price T.Bay Div.	Sault. Ste. Marie WPCP(1)	Brights Grove STP	Amherstburg WSS	Blenheim WSS	Atlas Specialty Steels	Amherstveiw WSS	Brockville WPCP
Canada Malting Co.	Sault. Ste. Marie WPCP(2)	Bruce A NGS	Belle River WPCP	Can. Haldiman Norfolk WSS	B.F. Goodrich Canada	Bakelite Thermosets	Brockville WTP
Domtar Packaging Ltd.	Sault. Ste. Marie WTP(1)	Bruce B NGS	Belle River WTP	Crystal Beach WPCP	Canadian Oxy-Chemicals	Baker Road WPCP	Cardinal WPCP
James River-Marathon Ltd.	Sault. Ste. Marie WTP(2)	Bruce Heavy Water Plant	Canadian Liquid Air	Crystal Beach WTP	Casco Company	Bath WPCP	Cardinal WTP
Kimberly Clark Can. Ltd	St. Marys Paper Inc.	Bruce Mines STP	Canadian Salt Co. (1)	Dunville WTP	Cyanamid N. Falls Plant	Bath WTP	Casco Company
Marathon STP	Union Carbide Canada Ltd.	Bruce Mines WTP	Canadian Salt Co. (2)	Elgin Area WSS	Cyanamid Welland Plant	Beaconsville WTP	Charlottenburgh TWP. WTP
Nipigon STP		CIL /McDougall TWP	Chinnok Chemical Co.	Erieau Erie Beach WSS	Domtar Fine Papers	Belleville WPCP	Cornwall WPCP
Nipigon WTP		Collingwood WPCP	CIL Inc. Lampton Works	Harrow Colchester WSS	Electro Minerals(CAN)Inc.	Belleville WTP	Cornwall WTP
Northern Wood Preservers		Collingwood WTP	Corunna WPCP	H. J. Heinz Co.	Fleet Manufacturing Co.	Biggar Lagoon	Courtaulds Ltd.
Pancake Bay Prov. Park		Domtar Inc. Sifto Salt	Courtright WPCP	Inco Metals Inc.	Ford Motor Co.	Borg-Warner Chemicals	Domtar Fine Paper
Provincial Paper Division		Douglas Point NGS	Dow Chemical Canada Ltd.	Int. Min. & Chemicals	Fort Erie North Pump Stn.	Bowmanville WTP #1	Dupont Canada
Red Rock WPCP		Eldorado Resources Ltd.	DuPont Canada Inc.	Kent County WSS	Fort Erie South Pump Stn.	Bowmanville WTP #2	Edwardsburg WPCP
Red Rock WTP		Goderich WPCP	Edgewater Beach WPCP	Leamington WPCP	General Motors of Can.Ltd	Brighton STP	Gananoque Lagoon
Rosspoint WTP		Goderich WTP	Esso Petroleum Canada	Nanticoke TGS	Hayes Dana Dr. Train Div.	Burlington WTP	Gananoque WTP
Schreiber STP		Goodyear Canada Inc.	Ethyl Canada Inc.	Oastead Foods Ltd.	Holiday Farms	Canada Cement Lafarge Ltd	Iroquois STP
Schreiber WTP		Goodyear Canada Inc.	Fiberglass Canada Inc.	Port Burwell WPCP	Inco Metals Ltd.	Canada Malting Co. Ltd.	Iroquois WTP
Thunder Bay TGS		Gore Bay WPCP	Ford Motor Co. of Can.Ltd	Port Dover WPCP	Kimberly Clark Of Canada	Canadian Vegetable Oil	Kingston (City) WPCP
Thunder Bay WPCP		Gore Bay WTP	General Chemical	Port Dover WTP	Niagara Falls WTP	Canron Inc.	Kraft Foods Ltd.
Thunder Bay WTP		Grand Bend STP	General Motors of Canada	Port Rowan WPCP	Niagara-on-the-Lake STP	Celanese Canada Inc.	Long Sault WPCP
		Kilbear Provincial Park	Hiram Walker & Sons Ltd	Port Rowan WTP	Niagara-on-the-Lake WTP	CFB Mountainveiw WTP	Long Sault WTP
		Kincardine WPCP	J. C. Keath TGS	Port Stanely WTP	Norton Co.	CFB Trenton WPCP	Marimac Inc.
		Kincardine WTP	Lampton County WSS	Port Stanley STP	Ontario Paper Co.	Chrysler Canada Ltd.	Morrisburg WPCP
		Lake Huron WSS	Lampton TGS	Raliegh TWP STP	Ontario Power Co.	Clarkson WPCP	Morrisburg WTP
		Lions Head WTP	Little River WPCP	Rock Pt. Provincial Park	Port Weller WPCP	Cobourg STP #1	Nitrochem Inc.
		Little Current WTP	Mitchells Bay WPCP	Romey WPCP	Seaway WPCP	Cobourg STP #2	Osnabruck TWP WPCP
		McGregor Point Prov. Park	Mitchells Bay WTP	Rosehill WTP	Sir Adam Beck #1 HGS	Cobourg WTP	Osnabruck TWP WTP
		Meaford WPCP	Novacor Chemicals	Selkirk Provencial Pk.	Sir Adam Beck #2 HGS	Corbett Creek WPCP	Phillips Cables
		Meaford WTP	Petrosar Corunna	Stelco Inc. Erie Works	Stampford/Niagra STP	Darlington NGS	Prescott WTP
		Midland WPCP	Point Edward WPCP	Texaco Canada Inc.	Stelco Inc. Page Hersey	Deseronto WPCP	Richmond Die Casting Ltd.
		Mitsubishi Electronics	Polysar Ltd.	Turkey Pt. Provincial Pk.	Stelco Inc. Welland Tube	Deseronto WTP	River St. Pumping St
		Owen Sound WPCP	Port Lampton WPCP	Union Gas Ltd.	Stevensville Lagoon	Dofasco Inc.	Rohn & Hass Canada Inc.
		Owen Sound WTP	Sarnia WPCP	Union WSS	Union Carbide Canada Ltd.	Domtar Packaging	
		Parry Sound WTP	Shell Canada Ltd.	West Lorne WTP	Welland WPCP	Domtar Wood Preserving	
		Penetanguishene WPCP	Sombra WPCP	Wheatly WTP	Welland WSS	Duffins Creek WPCP	
		Penetang. Hospital STP	Stoney Point WPCP			DuPont Canada Ltd.	
		Petrolia WTP	Sunoco Inc.			Easterly Filtration Plant	
		Port Elgin WTP	The Segrave Co. Ltd.			Eldorado Resource Ltd.(1)	
		Port McNicoll STP	Tilbury North WSS			Eldorado Resource Ltd.(2)	
		Port McNicoll WTP	Tilbury WTP			Eldorado Resource Ltd.(3)	
		Rio Algom Ltd.	Wallaceburg WPCP			Elizabeth Gardens PS	
		Southampton WPCP	Wickes Bumper Co. Ltd.			E.D. Smith Limited	
		Southampton WTP	Windsor PUC WTP			Ford Motor Co. of Can.Ltd	
		Standard Aggregates Inc.	Windsor Tecumseh WTP			General Motors of Canada	
		Thessalon Pump House	Windsor WPCP			Goodyear Canada	
		Thessalon STP				Graham Creek WPCP	
		Thornbury WPCP				Griesby WTP	
		Thornbury WTP				Hamilton Wentworth WPCP	

Table 1

ALL OPERATIONS INCLUDED IN THE ATLAS

[illegible]

Table 1

ALL OPERATIONS INCLUDED IN THE ATLAS

Lake Superior	St. Marys River	Lake Huron/Georgian Bay	St. Clair System	Lake Erie	Welland Canal/Niagara R.	Lake Ontario	St. Lawrence River
						South East WPCP	
						South West WPCP	
						Stelco Inc Parkdale Works	
						Stelco Inc.	
						St. Lawrence Cement	
						St. Lawrence Starch Co.	
						St. Marys Cement Co.	
						Texaco Canada Inc. (1)	
						Texaco Canada Inc. (2)	
						Trenton WPCP	
						Trenton WTP	
						TWP of Etobicoke STP	
						Union Carbide Can. Ltd.	
						Victory Soya Mills	
						Vineland WTP	
						Waupoos Canning Co. Ltd.	
						Wellington Mushroom Farm	
						Wellington WPCP	
						Whitby WTP	

Table 2
OPERATIONS INCLUDED IN VOLUME 4
ST. CLAIR SYSTEM

Operation	Map Number

Amherstburg WSS	29
Belle River WPCP	22
Belle River WTP	22
Canadian Liquid Air	6
Canadian Salt Co.	26
Canadian Salt Co.	27
Chinnok Chemical Co.	7
CIL Inc. Lampton Works	6
Corunna WPCP	3
Courtright WPCP	5
Dow Chemical Canada Ltd.	2
DuPont Canada Inc.	3
Edgewater Beach WPCP	30
Esso Petroleum Canada	2
Ethyl Canada Inc.	3
Fiberglass Canada Inc.	2
Ford Motor Co.	25
General Chemical	30
General Motors Trim	24
Hiram Walker & Sons Ltd	25
J. C. Keath TGS	27
Lampton County WSS	1
Lampton TGS	5
Little River WPCP	24
Mitchells Bay WPCP	16
Mitchells Bay WTP	16
Novacor Chemicals	4
Petrosar	3
Point Edward WPCP	1
Polysar Ltd.	2
Port Lampton WPCP	8
Sarnia WPCP	2
Shell Canada Ltd.	3
Sombra WPCP	7
Stoney Point WPCP	20
Sunoco Inc.	2
The Sagram Co. Ltd.	30
Tilbury North WSS	20
Tilbury WTP	19
Wallaceburg WPCP	15
Wickes Bumper Co. Ltd.	24
Windsor PUC WTP	25
Windsor Tecumseh WTP	24
Windsor WPCP	27

Table 3

INDUSTRY NOT RESPONDING TO QUESTIONNAIRE

INFORMATION OBTAINED FROM MOE

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*****
Name of Operation      Location      Comments
*****
Arrowhead Metals      Toronto      No applicable intake or outfall structures
BCL                   Cornwall     From Southeast Regional Office
Courtaulds            Cornwall     From Southeast Regional Office
Domtar Construction Materials Thorold     From Welland District Office
Domtar Wood Preservers Trenton      From Southeast Regional Office
Du Pont               Corunna     From Southwest Regional Office
Du Pont               Kingston    From Southeast Regional Office
Du Pont               Whitby      No applicable intake or outfall structures
Du Pont               Maitland    From Southeast Regional Office
Esco Ltd.             Whitby      No applicable intake or outfall structures
Fittings Ltd.         Whitby      No applicable intake or outfall structures
Ford Motor Co. of Canada Essex Engine Plant No applicable intake or outfall structures
Ford Motor Co. of Canada Windsor Engine Plant From Southwest Regional Office
General Chemicals     Sombra      From Southwest Regional Office
Holiday Farms         Niagara Falls From Welland District Office
Kraft Ltd.            Williamstown No applicable intake or outfall structures
Kraft Ltd.            Wolfe Island No applicable intake or outfall structures
Kraft Ltd.            Ingleside   From Southeast Regional Office

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Table 4

LIST OF ABBREVIATIONS

CEN	Central	
CFB	Canadian Forces Base	
CSO	Combined Sewer Overflow	
DND	Department of National Defence	
EO	Emergency Overflow	
IND	Industrial Operation	
MGS	Ministry of Government Services	
MNR	Ministry of Natural Resources	
MOE	Ministry of the Environment	
MUN	Municipal Operation	
NA	Not Available	
NGS	Nuclear Generating Station	
P Removal	Phosphorus Removal	
PP	Provincial Park	
PS	Pumping Station	
PUC	Public Utilities Commission	
RM	Regional Municipality	
S	Sanitary Sewer Overflow	
SS	Storm Sewer	
STP	Sewage Treatment Plant (same as WPCP)	
TGS	Thermal Generating Station	
TWP	Township	
UV	Ultra-Violet	
WPCP	Water Pollution Control Plant (same as STP)	
WSS	Water Supply System	
WTP	Water Treatment Plants	

TABLE 5

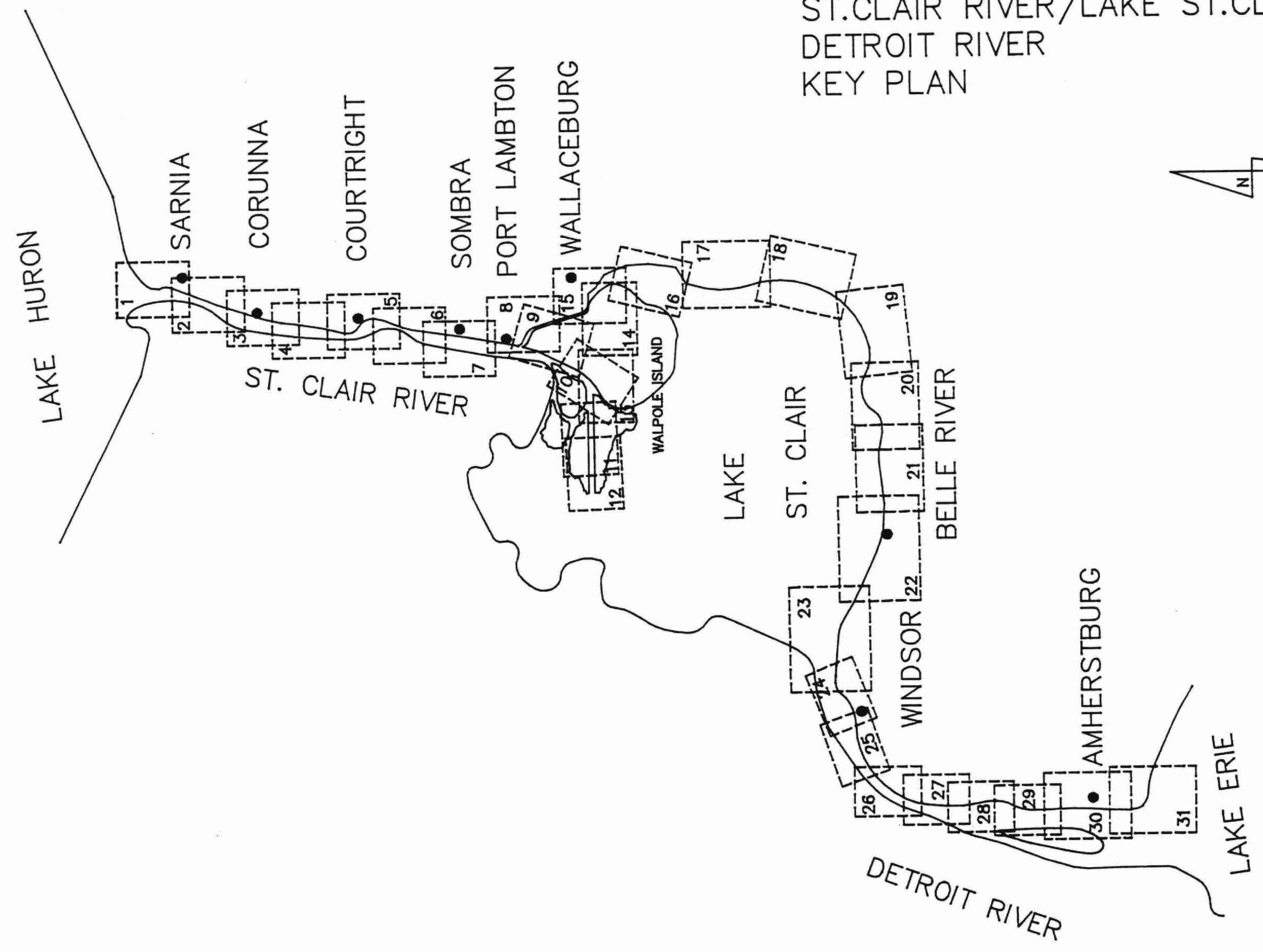
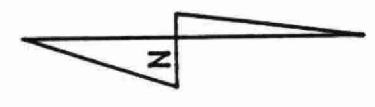
EXPLANATION OF DATA TABLES

Name of Operation:	Name of municipality or industry
Intake/Outfall:	Indication of Use of pipe
UMIS/IMIS No.:	Number in the Ministry's Utility Monitoring Information System and Industrial Monitoring Information System from which other data can be obtained.
Structure No.:	Indicates structures on the accompanying map.
Map No.:	Indicates map on which the structure can be located.
Operating Authority:	Identifies who owns or has jurisdiction over the facility i.e. Industry, MOE, MNR, MUN, PUC, MGS, etc.
Location:	Identifies where the facility and accompanying structures are located (usually indicated by as City, Town or Township).
Supplier/Receiver:	Identifies the water body that wither supplies water to a facility via the intake, or receives effluent via the outfall.
Point of Discharge:	Applies to outfalls only. Indicates location of discharge i.e. shore (0-99 m from shoreline), offshore ($\geq$ 100m for shoreline), harbour, embayment, river mouth (0-2 km upstream from lake).
Terminal Basin:	Lake or river basin, from which water is drawn or effluent discharged to
Activity:	General categorization of a particular facility (eg. Steel Production, Municipal Water Treatment, etc.)
Process Type:	Description of activity (eg. Major phases of Steel production, Physical and Chemical Treatment, Secondary Treatment, etc.)
Supply/Discharge Type:	Description of how water is drawn in, or effluent discharged (eg. Continuous, Batch Seasonal, etc.)

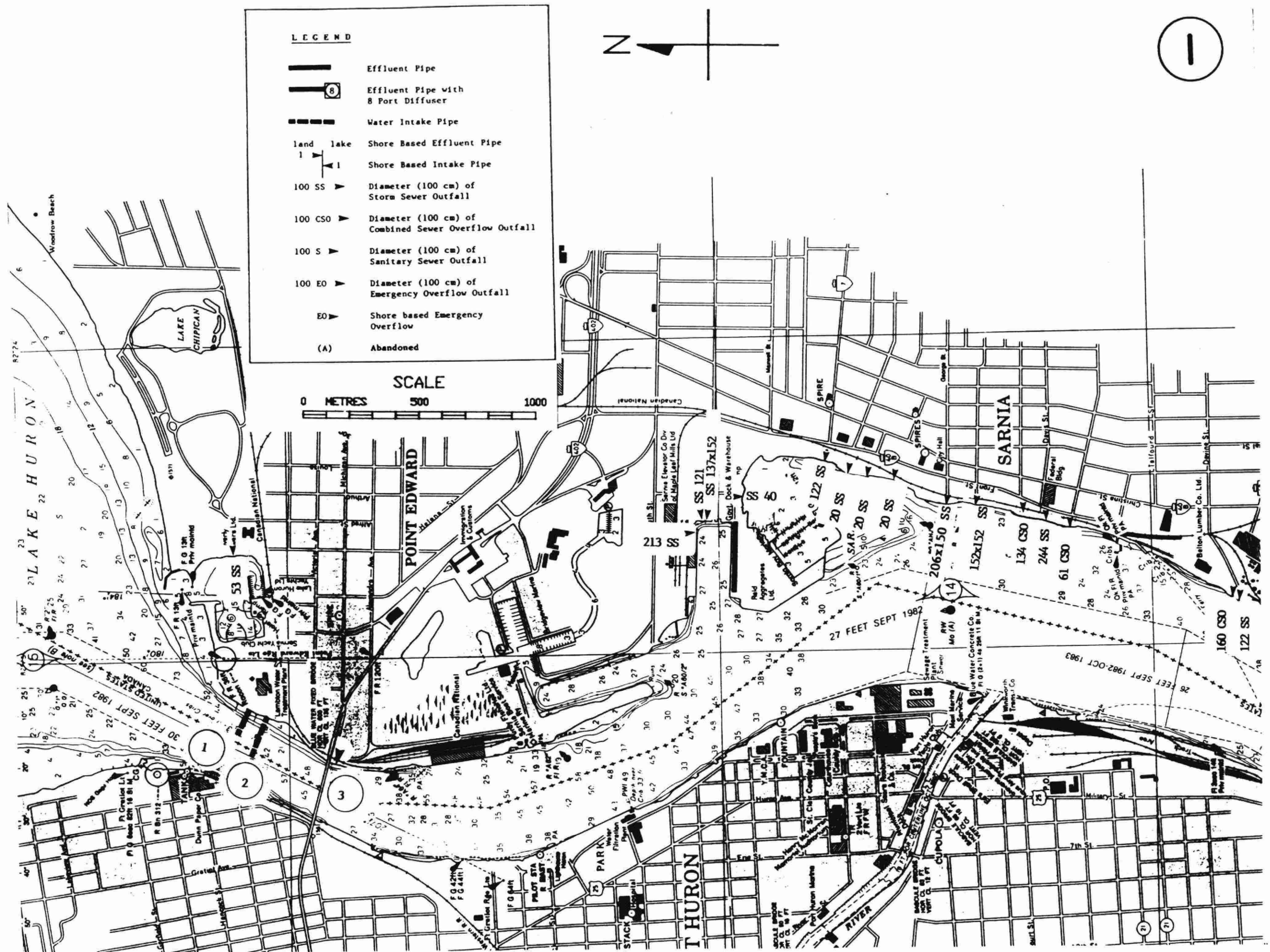
Treatment Type:	Description of how water and/or effluent is treated before use/before discharge. Indication of major steps in treatment, if any.
Comments:	Any other remarks relating to the operation, its intakes or outfalls, process or treatment activities, such as plant closures, future modifications, relationship with nearby operations, etc;
Design Flow:	Quantity (in 1,000 m ³ /day) of water can be drawn in via intake or discharged via outfall according to design specifications.
Mean Annual Flow:	Quantity (in 1,000 m ³ /day) on the average, of water can be drawn in via intake or discharged via outfall according to design specifications.
Pipe Length from Shore:	Length of intake/outfall pipe from shore, given in metres.
Pipe Diameter:	Given in centimeters. If pipe is rectangular or oval in shape, the largest dimension is given.
Water Depth at End of Pipe:	Depth of water, in metres, at the end of the pipe.
Water Depth above End of Pipe:	Depth of water, in metres, above the end of the pipe.
Diffuser:	Applies to outfall structures only. Indicates if an effluent diffusing structure is present on the outfall.
Number of Ports:	If diffuser is present on the outfall an indication is given to the number of ports in the diffusing structure.

KEY PLAN

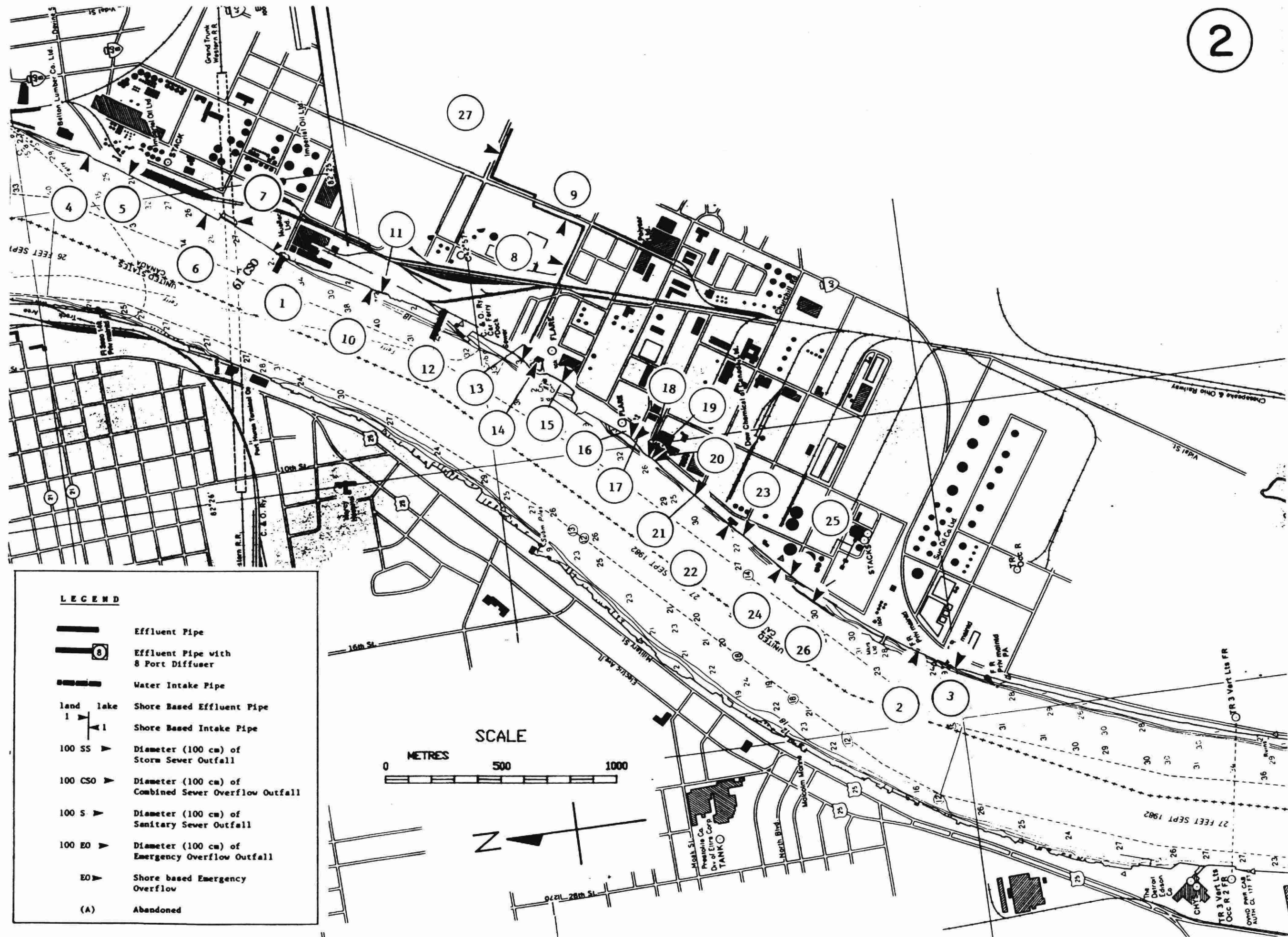
ST. CLAIR RIVER/LAKE ST. CLAIR/
DETROIT RIVER
KEY PLAN



Name	Lampton County WSS	Lampton County WSS	Point Edward WPCP				
Intake/Outfall	Intake	Intake	Outfall				
UNIS/INIS No.	210000906	210000906	110000597				
Structure No.	1	2	3				
Map Number	1	1	1				
Operating Authority	NOE	NOE	NOE				
Location	Point Edward	Point Edward	Point Edward				
Supplier/Receiver	St. Clair River	St. Clair River	St. Clair River				
Point of Discharge			Shore				
Terminal Basin	St. Clair River	St. Clair River	St. Clair River				
Activity	Municipal Water Treatment	Municipal Water Treatment	Municipal Sewage Treatment				
Process Type	Physical and Chemical Treatment	Physical and Chemical Treatment	Primary Treatment				
Supply/Discharge Type	Continuous	Continuous	Continuous				
Treatment Type	Filtration Chlorination Fluoridation	Filtration Chlorination Fluoridation	P Removal-Continuous				
Comments	Abandoned Screen House						
Design Flow (1000m3/day)	NA	181.84	2.59				
Mean Annual Flow (1000m3/day)	64.48	64.48	2.17				
Pipe length from shore (m)	110.00	179.22	22.86				
Pipe Diameter (cm)	61.00	121.92	61.00				
Water Depth at end of pipe (m)	12.80	19.20	3.96				
Water depth above end of pipe (m)	NA	18.60	3.96				
Diffuser			NO				
Number of ports							



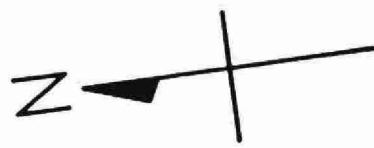
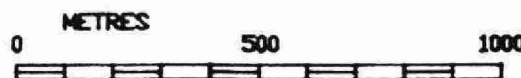
Name	Sarnia WPCP	Sunoco Inc.	Sunoco Inc.	Esso Petroleum Canada	Esso Petroleum Canada	Esso Petroleum Canada	Esso Petroleum Canada
Intake/Outfall	Outfall	Intake	Outfall	Intake	Outfall	Intake	Outfall
UNIS/INIS No.	120000907	0000490102	0000490102	0000070102	0000070102	0000070102	0000070102
Structure No.	1	2	3	4	5	6	7
Map Number	2	2	2	2	2	2	2
Operating Authority	NDN	IND	IND	IND	IND	IND	IND
Location	Sarnia	Sarnia	Sarnia	Sarnia	Sarnia	Sarnia	Sarnia
Supplier/Receiver	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River
Point of Discharge	Shore	St. Clair River	Shore	St. Clair River	Shore	St. Clair River	Offshore
Terminal Basin	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River
Activity	Municipal Sewage Treatment	Petroleum Refinery	Petroleum Refinery	Petroleum Refinery	Petroleum Refinery	Petroleum Refinery	Petroleum Refinery
Process Type	Primary Treatment	Crude atmospheric Vacuum Distillation Hydrogen Cracking	Crude atmospheric Vacuum Distillation Hydrogen Cracking	Conversion of Crude Oil into Petro Products and many chemical processes	Conversion of Crude Oil into Petro Products and many chemical processes	Conversion of Crude Oil into Petro Products and many chemical processes	Conversion of Crude Oil into Petro Products and many chemical processes
Supply/Discharge Type	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
Treatment Type	P Removal-Continuous Chlorination	Periodic Chlorine Injections	Oil Separation, Biological Treatment Clarification, Impoundment	None	API Gravity Separator	None	API Gravity Separator
Comments				No. 3 Pumphouse Cooling & Process Water	No.3 Separator Outfall	No. 1 Pumphouse Cooling & Process Water	No.5 Separator Outfall & Emergency overflow
Design Flow (1000m3/day)	68.19	NA	NA	37.23	NA	54.48	NA
Mean Annual Flow (1000m3/day)	52.28	83.00	93.00	NA	40.86	NA	NA
Pipe length from shore (m)	76.20	22.00	0.00	0.00	0.00	0.00	NA
Pipe Diameter (cm)	121.92	106.00	152.00	132.08	137.20	114.00	NA
Water Depth at end of pipe (m)	15.24	4.00	1.50	NA	9.14	9.14	NA
Water depth above end of pipe (m)	NA	4.00	0.00	2.43	NA	1.67	0.30
Diffuser	NO		NO		NO		NO
Number of ports							



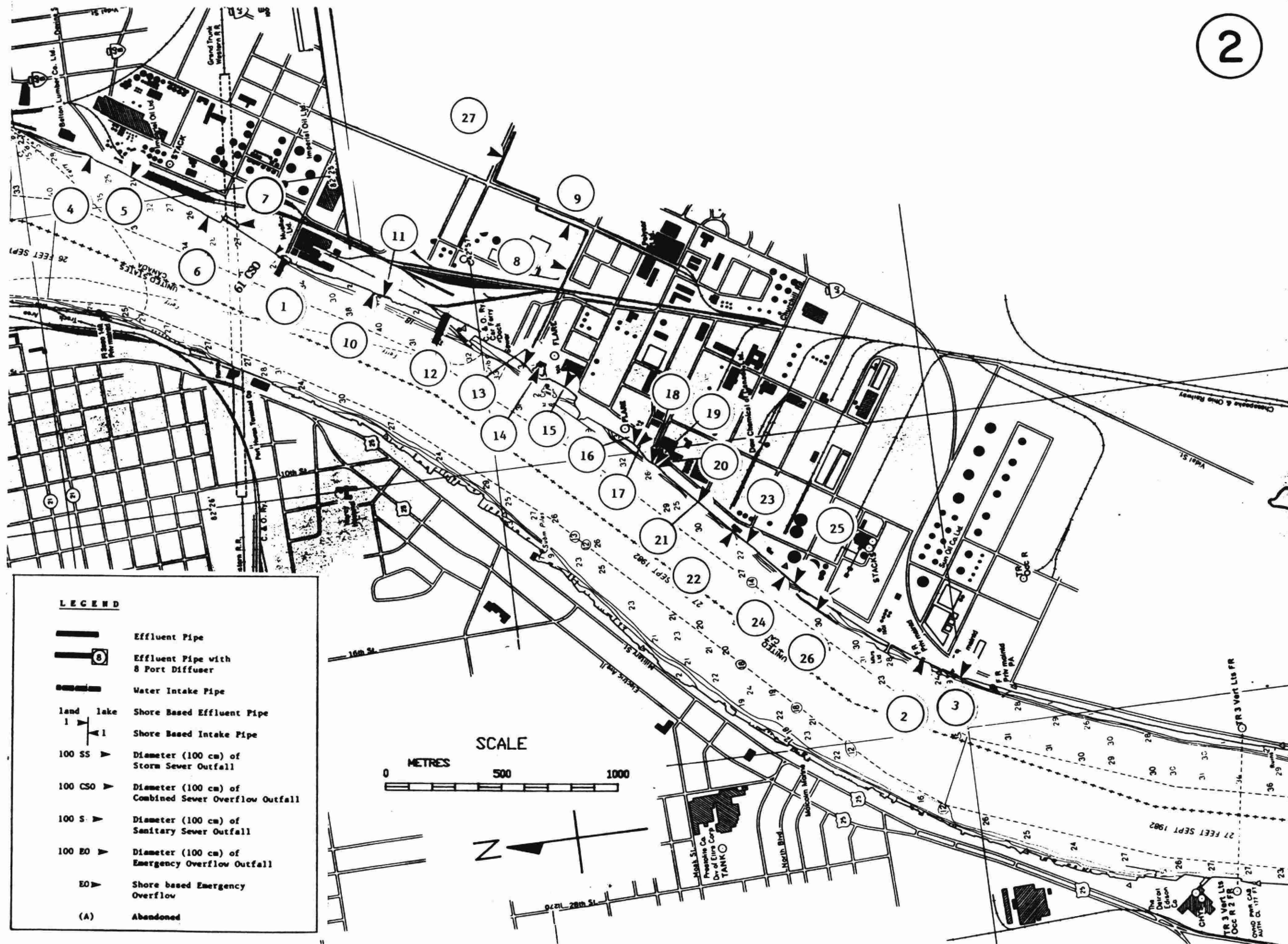
LEGEND

- Effluent Pipe
- Effluent Pipe with 8 Port Diffuser
- Water Intake Pipe
- Shore Based Effluent Pipe
- Shore Based Intake Pipe
- 100 SS > Diameter (100 cm) of Storm Sewer Outfall
- 100 CSO > Diameter (100 cm) of Combined Sewer Overflow Outfall
- 100 S > Diameter (100 cm) of Sanitary Sewer Outfall
- 100 EO > Diameter (100 cm) of Emergency Overflow Outfall
- EO > Shore based Emergency Overflow
- (A) Abandoned

SCALE



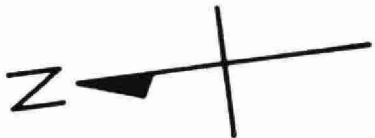
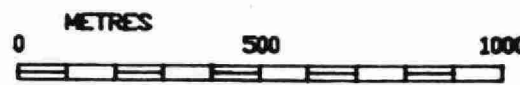
Name	Esso Petroleum Canada	Esso Petroleum Canada	Esso Petroleum Canada	Esso Petroleum Canada	Esso Petroleum Canada	Polysar Ltd.	Polysar Ltd.
Intake/Outfall	Outfall	Outfall	Intake	Outfall	Outfall	Outfall	Intake
UMIS/INIS No.	0000070102	0000070102	0000070102	0000070102	0000070102	0000030007	0000030007
Structure No.	8	9	10	11	12	13	14
Map Number	2	2	2	2	2	2	2
Operating Authority	IND	IND	IND	IND	IND	IND	IND
Location	Sarnia	Sarnia	Sarnia	Sarnia	Sarnia	Sarnia	Sarnia
Supplier/Receiver	Drainage Ditch	Drainage Ditch	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River
Point of Discharge	River Mouth	River Mouth	St. Clair River	Shore	Offshore	Offshore	St. Clair River
Terminal Basin	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River
Activity	Petroleum Refinery	Petroleum Refinery	Petroleum Refinery	Petroleum Refinery	Petroleum Refinery	Manufacturing of Petrochemicals and synthetic rubbers	Manufacturing of Petrochemicals and synthetic rubbers
Process Type	Conversion of Crude Oil into Petro Products and many chemical processes	Conversion of Crude Oil into Petro Products and many chemical processes	Conversion of Crude Oil into Petro Products and many chemical processes	Conversion of Crude Oil into Petro Products and many chemical processes	Conversion of Crude Oil into Petro Products and many chemical processes	Feedstock from refineries in the area is converted into synthetic rubber	Feedstock from refineries in the area is converted into synthetic rubber
Supply/Discharge Type	Batch	Batch	Continuous	Continuous	Continuous	Continuous	Continuous
Treatment Type	API Gravity Separator	None	None	API Gravity Separator	API Gravity Separator Dual Media Filters, Activated Sludge	None	Chlorination and Dispersant
Comments	Emergency Outfall with manual valve from impounding basin.	Emergency Outfall with manual valve.	No. 4 Pumphouse Cooling & Process Water	No.9 Separator Outfall	Combined Box & Cooling Water Outfall		Intake is composed of 12 seperate intake lines with various diameters
Design Flow (1000m3/day)	NA	NA	163.44	NA	NA	NA	500.00
Mean Annual Flow (1000m3/day)	NA	NA	NA	49.94	118.04	200.00	500.00
Pipe length from shore (m)	0.00	0.00	61.00	0.00	137.16	90.00	0.00
Pipe Diameter (cm)	71.12	61.00	213.00	167.00	45.72	305.00	91.00
Water Depth at end of pipe (m)	NA	0.00	10.00	1.52	7.63	5.00	5.20
Water depth above end of pipe (m)	NA	NA	7.31	NA	6.10	5.00	3.50
Diffuser	NO	NO		NO	NO	NO	
Number of ports							



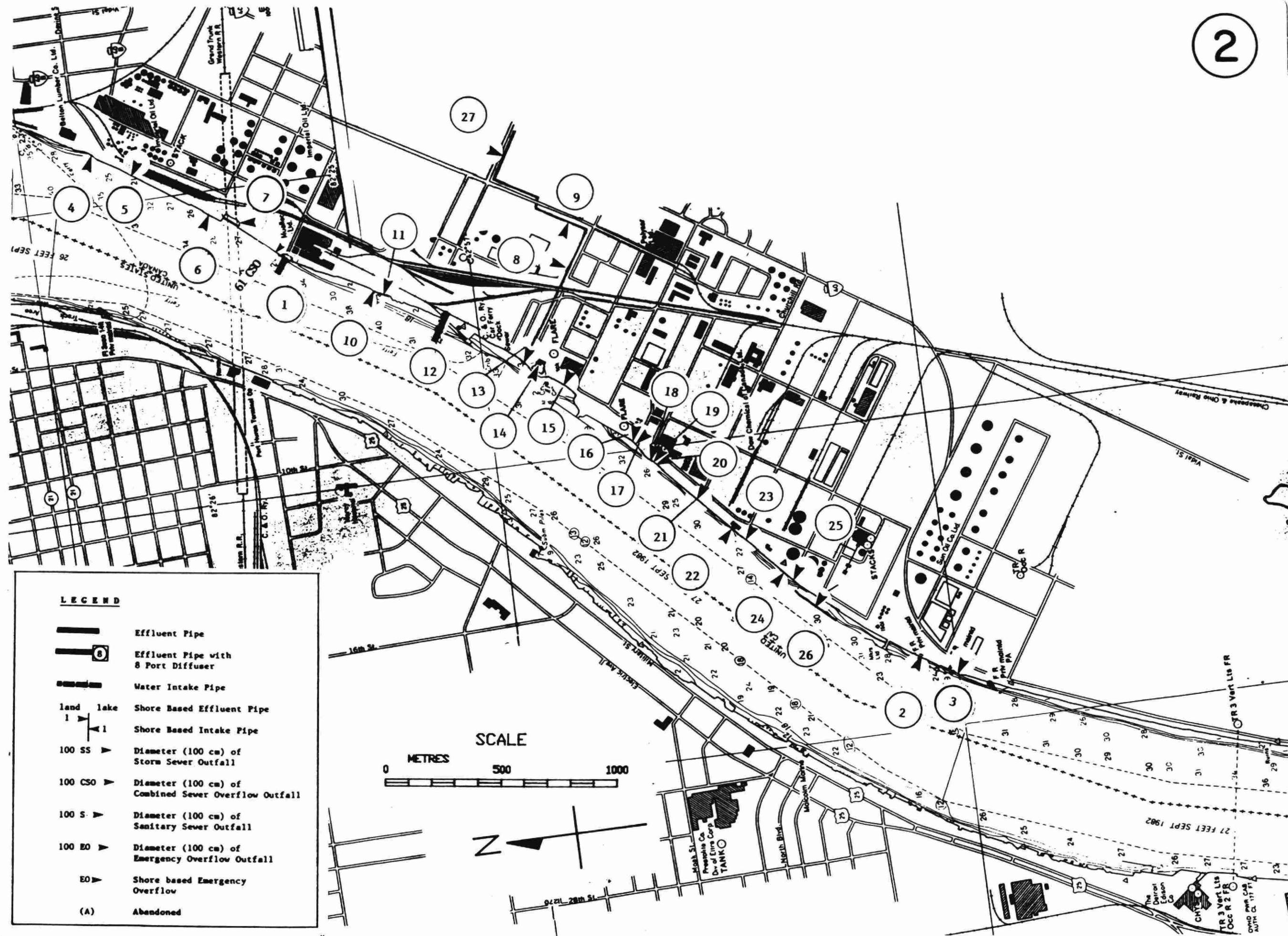
LEGEND

-  Effluent Pipe
-  Effluent Pipe with 8 Port Diffuser
-  Water Intake Pipe
-  Shore Based Effluent Pipe
-  Shore Based Intake Pipe
-  100 SS > Diameter (100 cm) of Storm Sewer Outfall
-  100 CSO > Diameter (100 cm) of Combined Sewer Overflow Outfall
-  100 S > Diameter (100 cm) of Sanitary Sewer Outfall
-  100 EO > Diameter (100 cm) of Emergency Overflow Outfall
-  EO > Shore based Emergency Overflow
-  (A) Abandoned

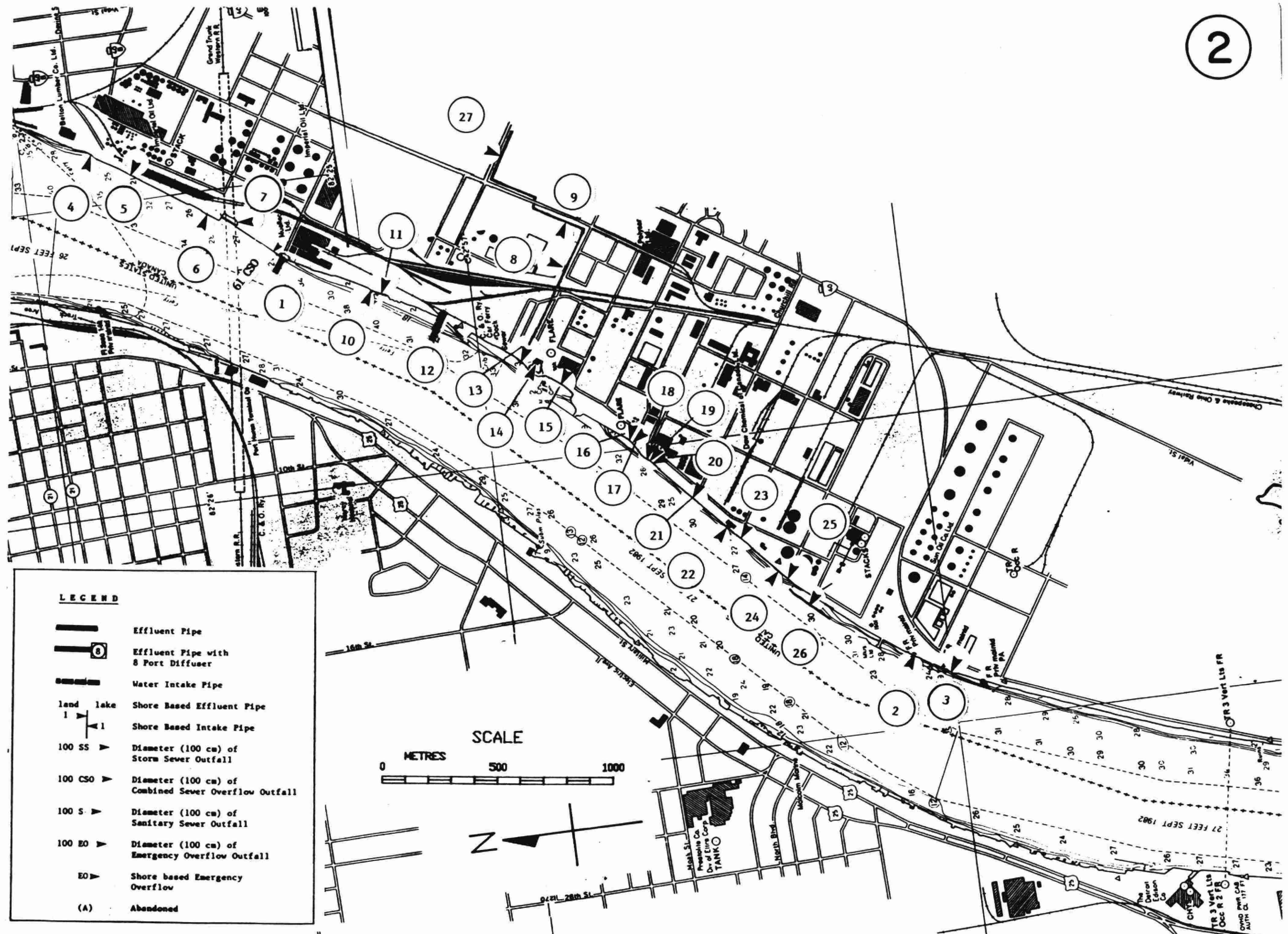
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Name	Polysar Ltd.	Polysar Ltd.	Polysar Ltd.	Dow Chemical Canada Ltd.	Dow Chemical Canada Ltd.	Dow Chemical Canada Ltd.	Dow Chemical Canada Ltd.
Intake/Outfall	Outfall	Outfall	Outfall	Outfall	Outfall	Outfall	Outfall
DMIS/IMIS No.	0000030007	0000030007	0000030007	0000910109	0000910109	0000910109	0000910109
Structure No.	15	16	17	18	19	20	21
Map Number	2	2	2	2	2	2	2
Operating Authority	IND	IND	IND	IND	IND	IND	IND
Location	Sarnia	Sarnia	Sarnia	Sarnia	Sarnia	Sarnia	Sarnia
Supplier/Receiver	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River
Point of Discharge	Shore	Shore	Shore	Shore	Shore	Shore	Shore
Terminal Basin	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River
Activity	Manufacturing of Petrochemicals and synthetic rubbers	Manufacturing of Petrochemicals and synthetic rubbers	Manufacturing of Petrochemicals and synthetic rubbers	Manufacturing of Basic Chemicals and Plastics	Manufacturing of Basic Chemicals and Plastics	Manufacturing of Basic Chemicals and Plastics	Manufacturing of Basic Chemicals and Plastics
Process Type	Feedstock from refineries in the area is converted into synthetic rubber	Feedstock from refineries in the area is converted into synthetic rubber	Feedstock from refineries in the area is converted into synthetic rubber	Brine and feedstock from refineries are made into chlorine related products	Brine and feedstock from refineries are made into chlorine related products	Brine and feedstock from refineries are made into chlorine related products	Brine and feedstock from refineries are made into chlorine related products
Supply/Discharge Type	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
Treatment Type	None	Secondary Treatment	None	Separators, Strippers and Biological Oxidation	Separators, Strippers and Biological Oxidation	Separators, Strippers and Biological Oxidation	Separators, Strippers and Biological Oxidation
Comments				Sewer discharges to the river via a mixing box located behind the seawall	Sewer discharges to the river via a mixing box located behind the seawall	Sewer discharges to the river via a mixing box located behind the seawall	Sewer discharges to the river via a mixing box located behind the seawall
Design Flow (1000m3/day)	NA	NA	NA	NA	NA	NA	NA
Mean Annual Flow (1000m3/day)	100.00	150.00	20.00	60.00	60.00	30.00	60.00
Pipe length from shore (m)	0.00	0.00	0.00	NA	NA	NA	30.00
Pipe Diameter (cm)	137.00	168.00	183.00	NA	NA	NA	91.00
Water Depth at end of pipe (m)	0.00	3.00	3.00	2.00	2.00	2.00	6.50
Water depth above end of pipe (m)	0.00	2.00	2.00	0.50	0.50	0.50	5.50
Diffuser	NO	NO	NO	NO	NO	NO	NO
Number of ports							

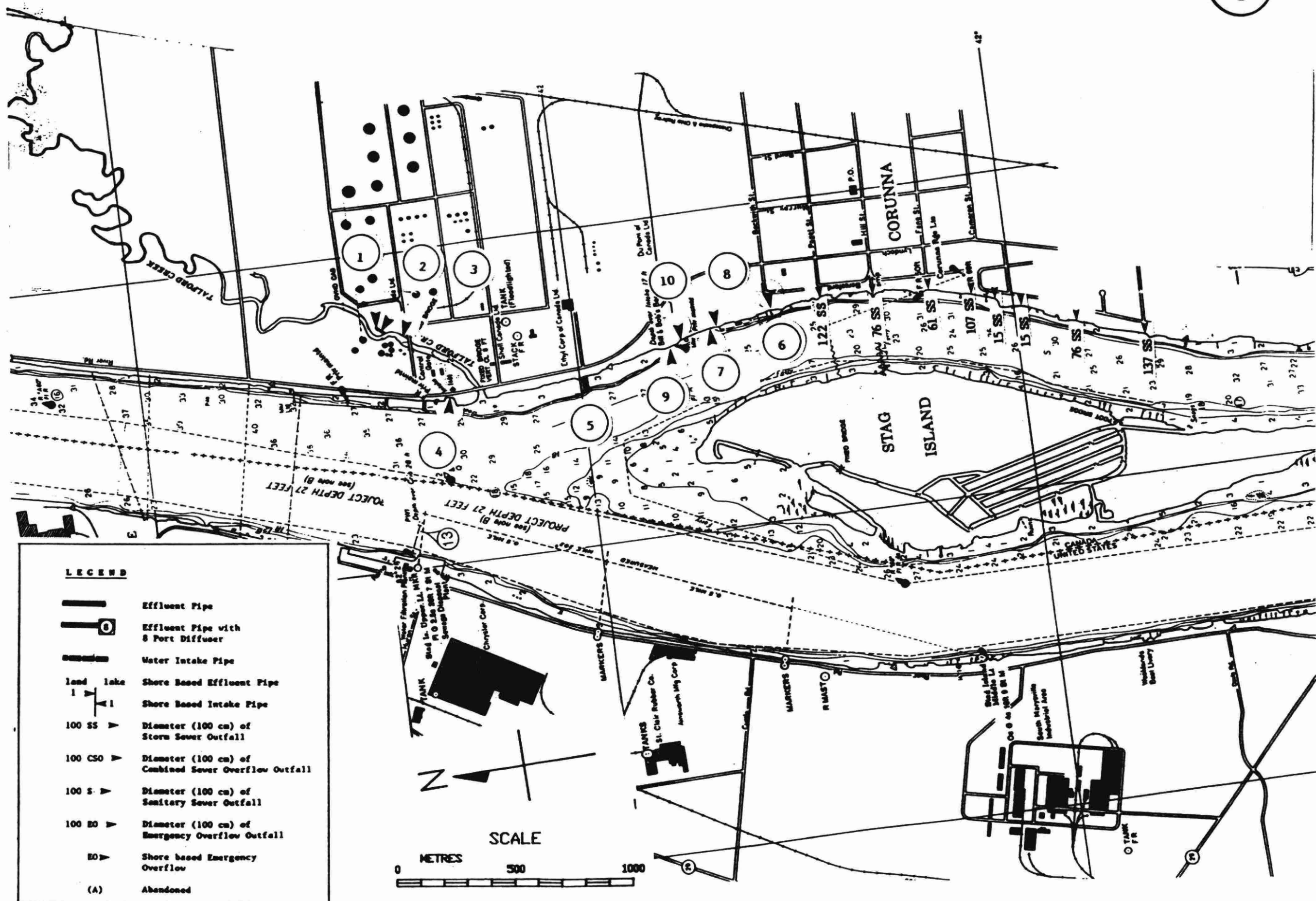


Name	Dow Chemical Canada Ltd.	Dow Chemical Canada Ltd.	Dow Chemical Canada Ltd.	Dow Chemical Canada Ltd.	Dow Chemical Canada Ltd.	Fiberglass Canada Inc.
Intake/Outfall	Intake	Outfall	Intake	Outfall	Outfall	Outfall
UNIS/INIS No.	0000910109	0000910109	0000910109	0000910109	0000910109	NA
Structure No.	22	23	24	25	26	27
Map Number	2	2	2	2	2	2
Operating Authority	IND	IND	IND	IND	IND	IND
Location	Sarnia	Sarnia	Sarnia	Sarnia	Sarnia	Sarnia
Supplier/Receiver	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River
Point of Discharge		Shore		Shore	Shore	River Mouth
Terminal Basin	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River
Activity	Manufacturing of Basic Chemicals and Plastics	Manufacturing of Basic Chemicals and Plastics	Manufacturing of Basic Chemicals and Plastics	Manufacturing of Basic Chemicals and Plastics	Manufacturing of Basic Chemicals and Plastics	Manufacturing of fibreglass insulation products
Process Type	Brine and feedstock from refineries are made into chlorine related products	Brine and feedstock from refineries are made into chlorine related products	Brine and feedstock from refineries are made into chlorine related products	Brine and feedstock from refineries are made into chlorine related products	Brine and feedstock from refineries are made into chlorine related products	NA
Supply/Discharge Type	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
Treatment Type	Screening Chlorination	Separators, Strippers and Biological Oxidation	Screening, Chlorination Filtration and De-ionizing	Separators, Strippers and Biological Oxidation	Separators, Strippers and Biological Oxidation	None
Comments		Sewer discharges to the river via a mixing box located behind the seawall		Sewer discharges to the river via a mixing box located behind the seawall	Sewer discharges to the river via a mixing box located behind the seawall	Flow reduction in July 1987 due to shutdown of glass melting furnace and related operations
Design Flow (1000m3/day)	850.00	NA	690.00	NA	NA	NA
Mean Annual Flow (1000m3/day)	450.00	80.00	450.00	400.00	10.00	0.01
Pipe length from shore (m)	23.00	NA	29.00	NA	NA	0.00
Pipe Diameter (cm)	240.00	NA	300.00	NA	NA	60.00
Water Depth at end of pipe (m)	7.50	2.00	7.50	2.00	2.00	NA
Water depth above end of pipe (m)	5.50	0.50	5.50	0.50	0.50	0.00
Diffuser		NO		NO	NO	NO
Number of ports						

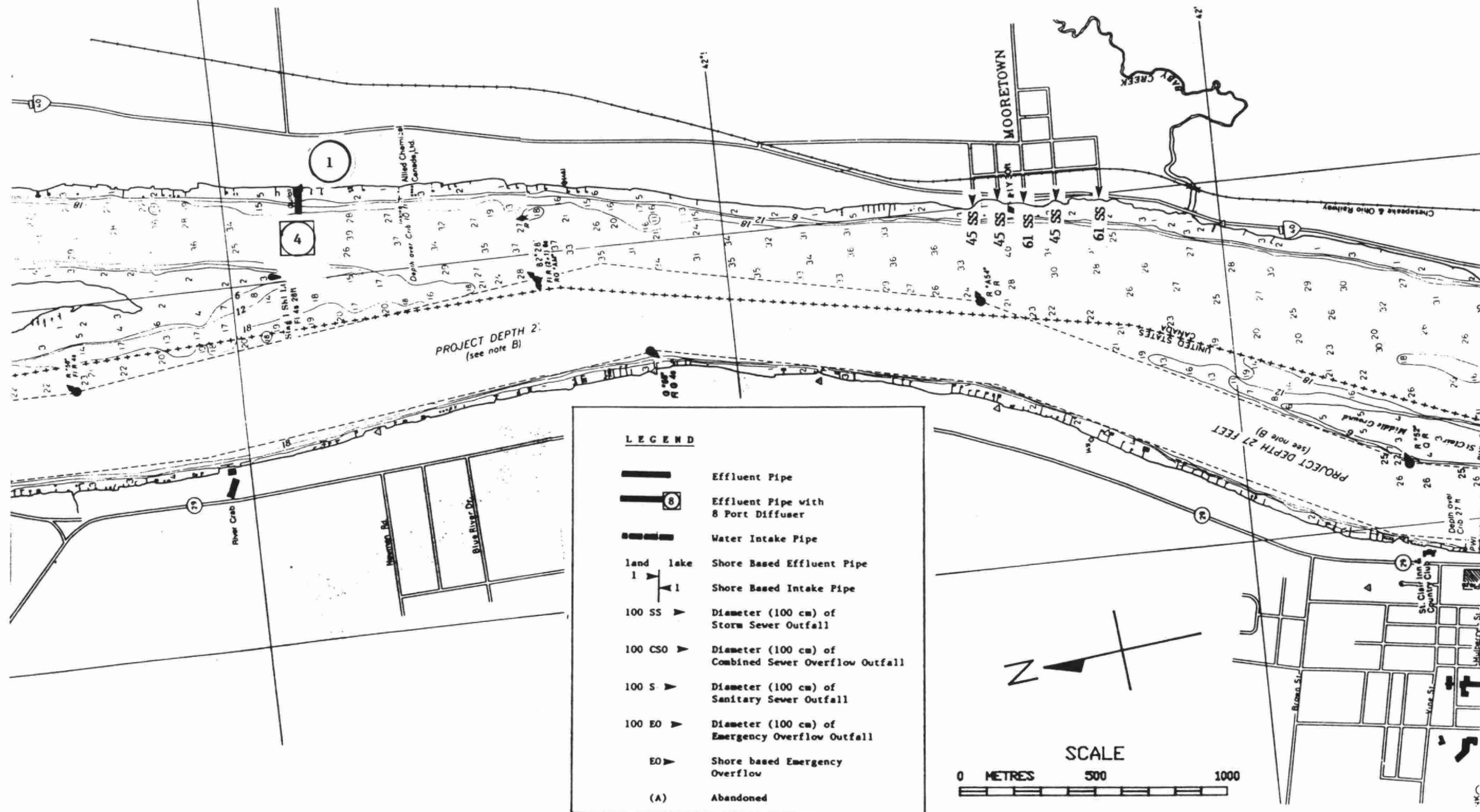


Name	Shell Canada Ltd.	Shell Canada Ltd.	Shell Canada Ltd.	Shell Canada Ltd.	Ethyl Canada Inc.	Corunna WPCP	Petrosar Ltd.
Intake/Outfall	Outfall	Outfall	Outfall	Intake	Outfall	Outfall	Intake
UNIS/INIS No.	0000510107	0000510107	0000510107	0000510107	0000120006	11000048	0000030007
Structure No.	1	2	3	4	5	6	7
Map Number	3	3	3	3	3	3	3
Operating Authority	IND	IND	IND	IND	IND	MOE	IND
Location	Corunna	Corunna	Corunna	Corunna	Corunna	Corunna	Corunna
Supplier/Receiver	Talfourd Creek	Talfourd Creek	Talfourd Creek	St. Clair River	St. Clair River	St. Clair River	St. Clair River
Point of Discharge	River Mouth	River Mouth	River Mouth		Offshore	Shore	
Terminal Basin	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River	St. Clair River
Activity	Petroleum Refinery	Petroleum Refinery	Petroleum Refinery	Petroleum Refinery	Chemical Manufacturing Principally lead antiknock compound	Municipal Sewage Treatment	Petroleum Refinery
Process Type	Conversion of crude oil to a variety of petro products	Conversion of crude oil to a variety of petro products	Conversion of crude oil to a variety of petro products	Conversion of crude oil to a variety of petro products	Alkylation of a Sodium lead alloy	Secondary Treatment	Provide petroleum feed- stock to local PetroChem. operations
Supply/Discharge Type	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
Treatment Type	API Separator, Biox Secondary Treatment	None	None	Only boiler feed water treated.	Flocculation, Settling Deep Bed Filtration	Extended Aeration P Removal-Continuous	Filtration Degasification Demineralization
Comments		Pipe being removed late 1987	Water does not come in contact with oil. Clean water outfall		Pipe Buried 89m to ship cannal		
Design Flow (1000m3/day)	128.00	NA	NA	342.00	39.30	4.55	43.60
Mean Annual Flow (1000m3/day)	81.00	NA	142.00	273.00	18.90	2.84	17.00
Pipe length from shore (m)	0.00	1.80	1.00	9.10	89.00	NA	38.00
Pipe Diameter (cm)	152.00	122.00	107.00	211.00	168.00	45.72	122.00
Water Depth at end of pipe (m)	NA	1.80	1.00	3.00	5.00	1.30	7.30
Water depth above end of pipe (m)	NA	NA	NA	3.00	5.00	NA	5.00
Diffuser	NO	NO	NO		NO	NO	
Number of ports							

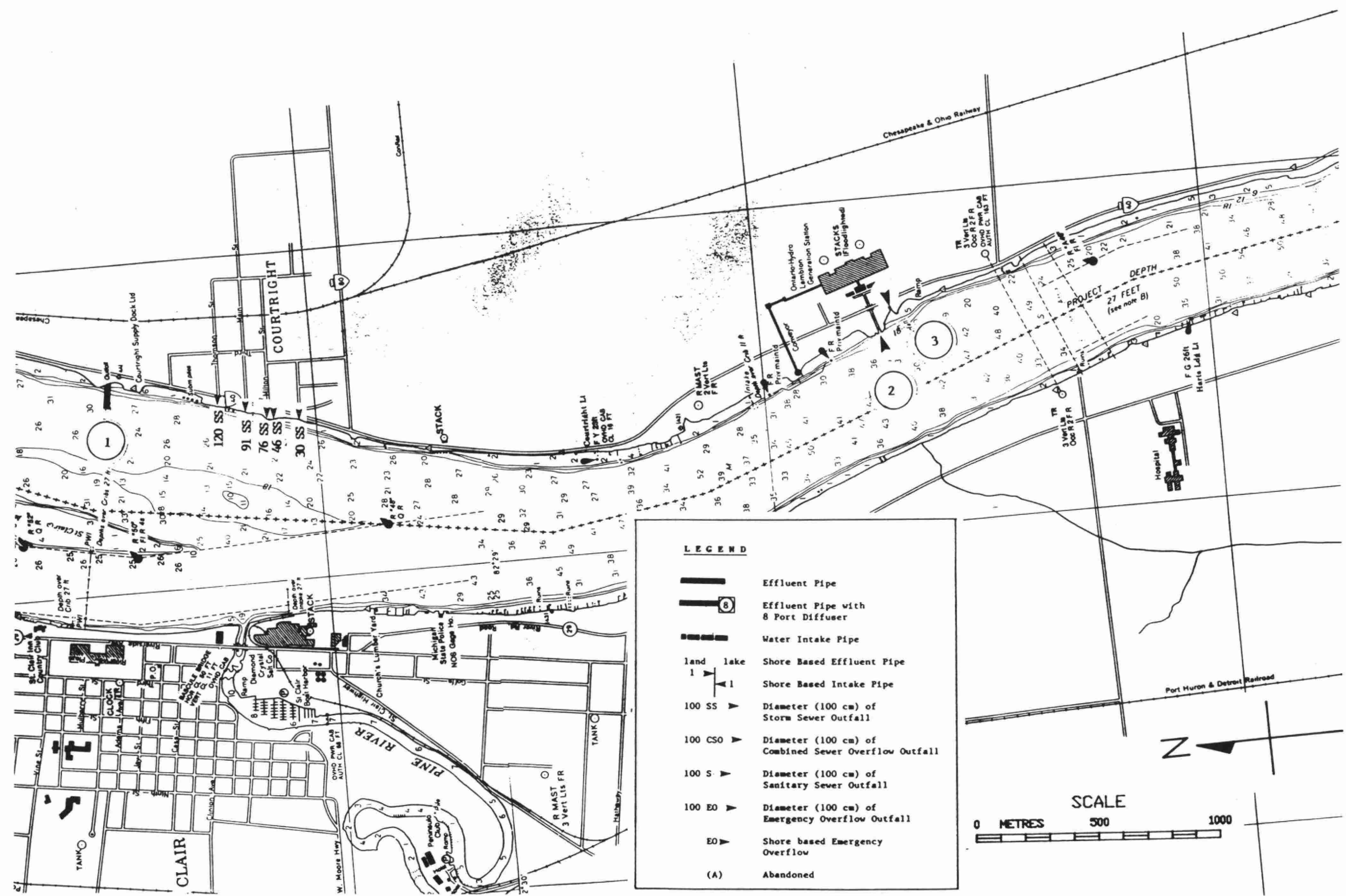
Name	Petrosar Ltd.	DuPont Canada Inc.	DuPont Canada Inc.				
Intake/Outfall	Outfall	Intake	Outfall				
UMIS/IMIS No.	0000030007	0000080309	0000080309				
Structure No.	8	9	10				
Map Number	3	3	3				
Operating Authority	IND	IND	IND				
Location	Corunna	Corunna	Corunna				
Supplier/Receiver	St. Clair River	St. Clair River	St. Clair River				
Point of Discharge	Shore		Shore				
Terminal Basin	St. Clair River	St. Clair River	St. Clair River				
Activity	Petroleum Refinery	Manufacturing of polyethelene resins	Manufacturing of polyethelene resins				
Process Type	Secondary Treatment	Ethylene from local petro refineries is used to make plastics	Ethylene from local petro refineries is used to make plastics				
Supply/Discharge Type	Continuous	Continuous	Continuous				
Treatment Type	Oil Separation, Activated Sludge Treatment, Clarification, Optional Carbon filtering	Screened and Chlorinated	Skimming ponds for removal of solids and hydrocarbons				
Comments			Flow figures do not include storm water flow				
Design Flow (1000m3/day)	12.53	67.00	163.00				
Mean Annual Flow (1000m3/day)	6.45	44.20	40.00				
Pipe length from shore (m)	3.50	38.00	0.00				
Pipe Diameter (cm)	71.10	76.00	107.00				
Water Depth at end of pipe (m)	7.30	9.10	1.00				
Water depth above end of pipe (m)	7.30	6.70	0.00				
Diffuser	NO		NO				
Number of ports							



Name	Novacor Chemicals					
Intake/Outfall	Outfall					
UMIS/IMIS No.	0000380105					
Structure No.	1					
Map Number	4					
Operating Authority	IND					
Location	Mooretown					
Supplier/Receiver	St. Clair River					
Point of Discharge	Offshore					
Terminal Basin	St. Clair River					
Activity	Mfg. polyethylene resins					
Process Type	Feedstock from local refineries is converted into polyethylene					
Supply/Discharge Type	Continuous					
Treatment Type	Settling Ponds Extended Aeration					
Comments	Formerly Union Carbide Canada Limited.					
Design Flow (1000m3/day)	3.25					
Mean Annual Flow (1000m3/day)	2.50					
Pipe length from shore (m)	85.00					
Pipe Diameter (cm)	25.00					
Water Depth at end of pipe (m)	4.60					
Water depth above end of pipe (m)	NA					
Diffuser	YES					
Number of ports	4					

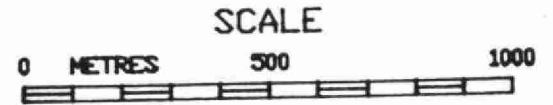


Name	Courtright WPCP	Lampton TGS	Lampton TGS				
Intake/Outfall	Outfall	Intake	Outfall				
UNIS/INIS No.	110001818	NA	NA				
Structure No.	1	2	3				
Map Number	5	5	5				
Operating Authority	MOE	Ontario Hydro	Ontario Hydro				
Location	Courtright	Courtright	Courtright				
Supplier/Receiver	St. Clair River	St. Clair River	St. Clair River				
Point of Discharge	Offshore		Shore				
Terminal Basin	St. Clair River	St. Clair River	St. Clair River				
Activity	Municipal Sewage Treatment	Electrical Generation Facility	Electrical Generation Facility				
Process Type	Secondary Treatment	Coal fired electricity generation plant	Coal fired electricity generation plant				
Supply/Discharge Type	Continuous	Continuous	Continuous				
Treatment Type	Extended Aeration P Removal-Continuous	Bar Racks & Travelling Screens	Filtration By Bar Racks Screens				
Comments		Intake structure is a channel	Outfall structure is a channel				
Design Flow (1000m3/day)	0.57	2937.60	2937.60				
Mean Annual Flow (1000m3/day)	0.88	2732.00	2732.00				
Pipe length from shore (m)	94.00	0.00	0.00				
Pipe Diameter (cm)	60.96	760.00	7.6m wide Channel				
Water Depth at end of pipe (m)	7.01	5.00	5.0m deep channel				
Water depth above end of pipe (m)	5.50	0.00	0.00				
Diffuser	NO		NO				
Number of ports							

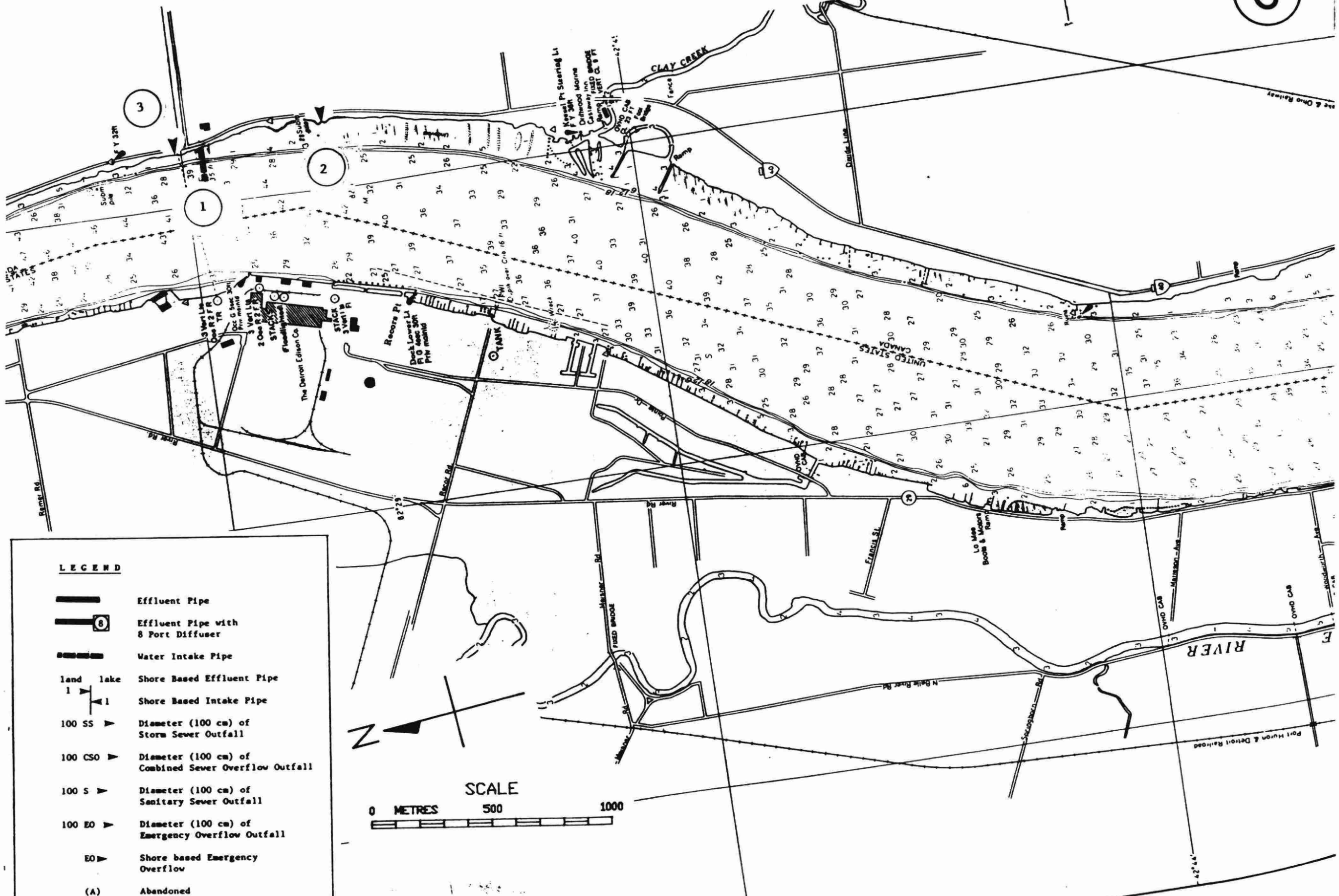


LEGEND

- Effluent Pipe
- Effluent Pipe with 8 Port Diffuser
- Water Intake Pipe
- Shore Based Effluent Pipe
- Shore Based Intake Pipe
- 100 SS > Diameter (100 cm) of Storm Sewer Outfall
- 100 CSO > Diameter (100 cm) of Combined Sewer Overflow Outfall
- 100 S > Diameter (100 cm) of Sanitary Sewer Outfall
- 100 EO > Diameter (100 cm) of Emergency Overflow Outfall
- EO > Shore based Emergency Overflow
- (A) Abandoned

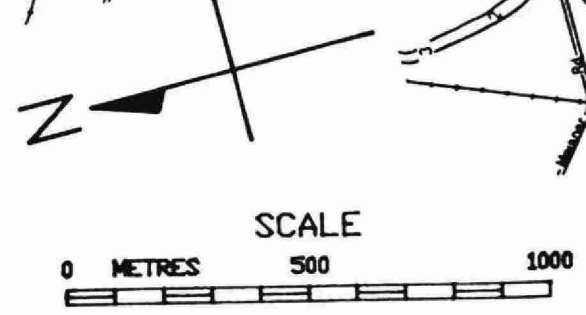


Name	CIL Inc. Lampton Works	CIL Inc. Lampton Works	Canadian Liquid Air				
Intake/Outfall	Intake	Outfall	Outfall				
DMIS/INIS No.	0000390203	0000390203	NA				
Structure No.	1	2	3				
Map Number	6	6	6				
Operating Authority	IND	IND	IND				
Location	Courtright	Courtright	Courtright				
Supplier/Receiver	St. Clair River	St. Clair River	St. Clair River				
Point of Discharge		Shore	Shore				
Terminal Basin	St. Clair River	St. Clair River	St. Clair River				
Activity	Mfg. Fertilizers, ammonia, ammonium nitrate, urea	Mfg. Fertilizers, ammonia, ammonium nitrate, urea	Liquification of CO2				
Process Type	Conversion of Sulphuric acid, phosphate ore and nitrogen into fertilizer	Conversion of Sulphuric acid, phosphate ore and nitrogen into fertilizer	Compression and cooling of CO2 gas				
Supply/Discharge Type	Continuous	Continuous	Continuous				
Treatment Type	Softening & ion exchange for process & boiler water no treatment for cooling water.	At source recovery or reuse of process effluent	None				
Comments	Liquid Carbonic and Can. Liquid Air tied into CIL water distribution system	Submerged channel to river, a distance of 100m.	Plant in operation since mid 1986				
Design Flow (1000m3/day)	627.53	NA	19.29				
Mean Annual Flow (1000m3/day)	365.00	365.00	NA				
Pipe length from shore (m)	130.00	19.50	NA				
Pipe Diameter (cm)	244.00	152.00	NA				
Water Depth at end of pipe (m)	12.20	1.68	NA				
Water depth above end of pipe (m)	9.80	0.15	NA				
Diffuser		NO	NA				
Number of ports							

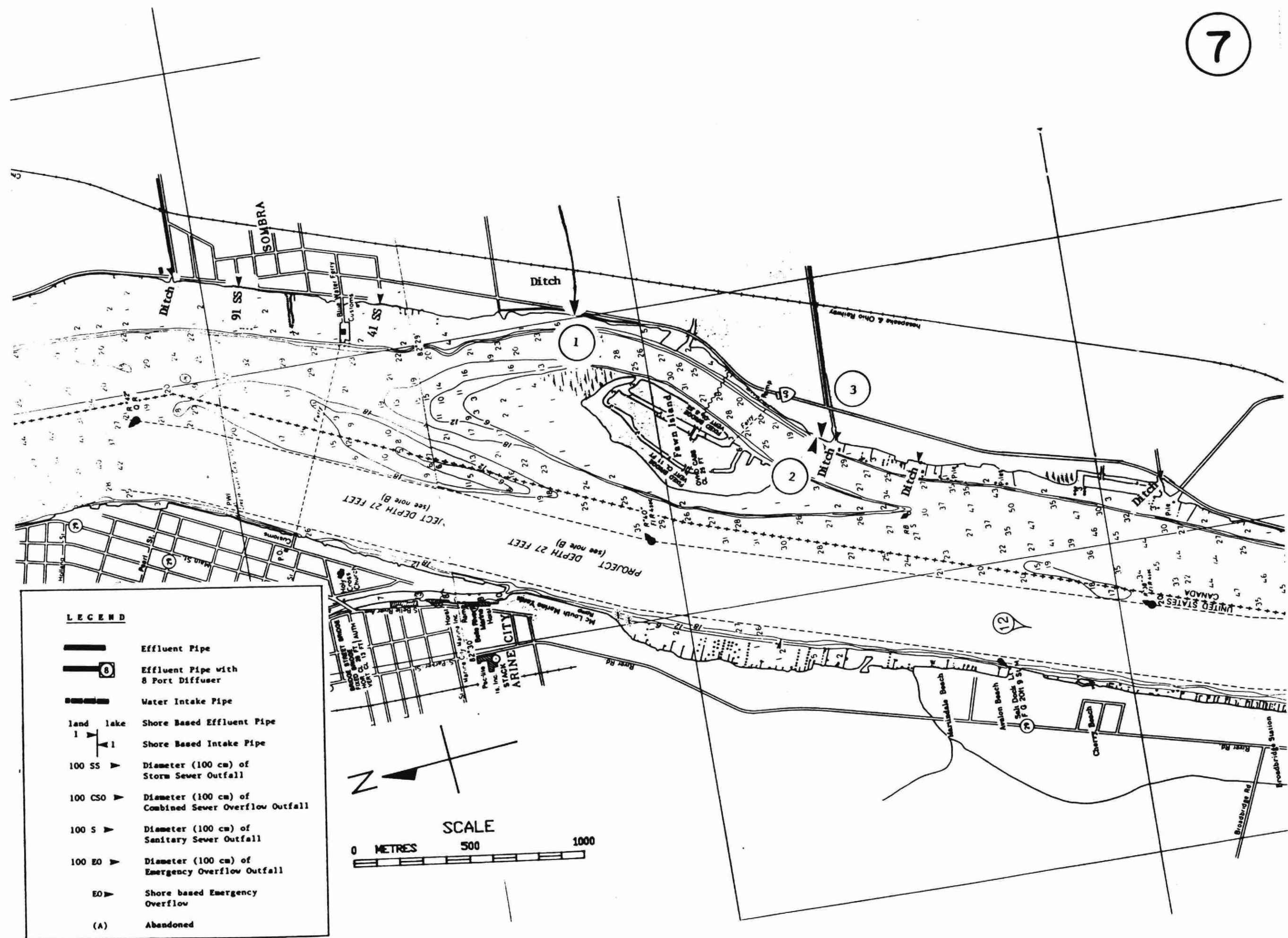


LEGEND

- Effluent Pipe
- Effluent Pipe with 8 Port Diffuser
- Water Intake Pipe
- Shore Based Effluent Pipe
- Shore Based Intake Pipe
- Diameter (100 cm) of Storm Sewer Outfall
- Diameter (100 cm) of Combined Sewer Overflow Outfall
- Diameter (100 cm) of Sanitary Sewer Outfall
- Diameter (100 cm) of Emergency Overflow Outfall
- Shore based Emergency Overflow
- Abandoned

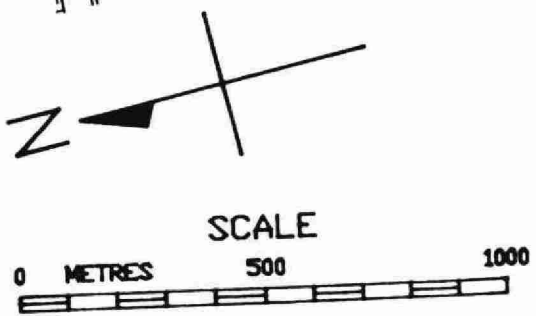


Name	Sombra WPCP	Chinnok Chemical Co.	Chinnok Chemical Co.				
Intake/Outfall	Outfall	Intake	Outfall				
UMIS/INIS No.	110001694	NA	NA				
Structure No.	1	2	3				
Map Number	7	7	7				
Operating Authority	MOR	IND	IND				
Location	Sombra	Sombra	Sombra				
Supplier/Receiver	St. Clair River	St. Clair River	St. Clair River				
Point of Discharge	Shore		Shore				
Terminal Basin	St. Clair River	St. Clair River	St. Clair River				
Activity	Municipal Sewage Treatment	Methylamines Mfg.	Methylamines Mfg.				
Process Type	Secondary Treatment	NA	NA				
Supply/Discharge Type	Batch (Seasonal)	Continuous	Continuous				
Treatment Type	Conventional Lagoon P Removal	Zeolite Softener & Sand Filter	Aeration, Irrigation, Chemical Treatment				
Comments							
Design Flow (1000m3/day)	0.97	0.75	0.13				
Mean Annual Flow (1000m3/day)	0.20	0.24	0.10				
Pipe length from shore (m)	0.00	15.00	48.00				
Pipe Diameter (cm)	30.48	35.50	5.00				
Water Depth at end of pipe (m)	0.00	5.00	5.50				
Water depth above end of pipe (m)	0.00	4.00	5.50				
Diffuser	NO		NO				
Number of ports							

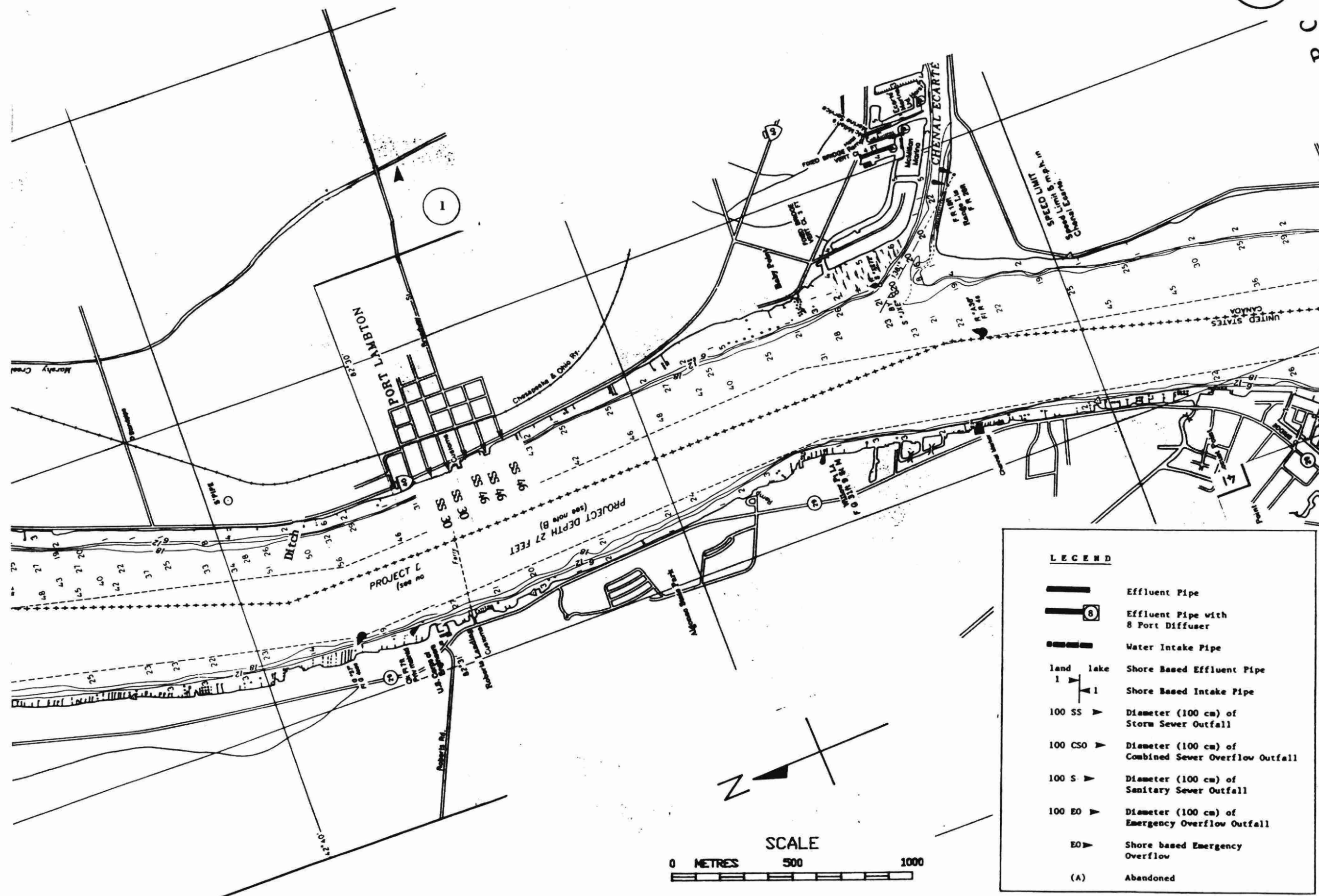


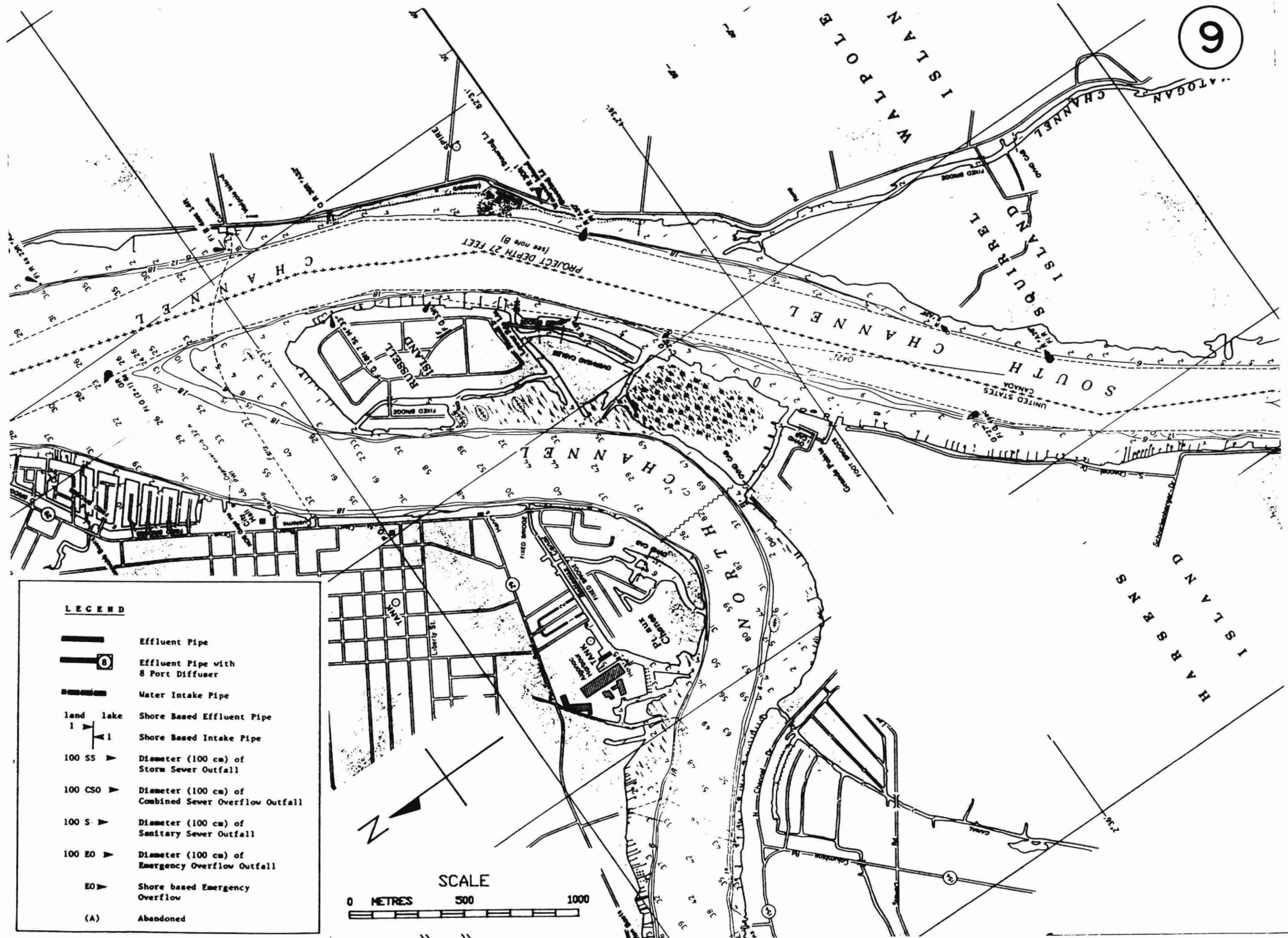
LEGEND

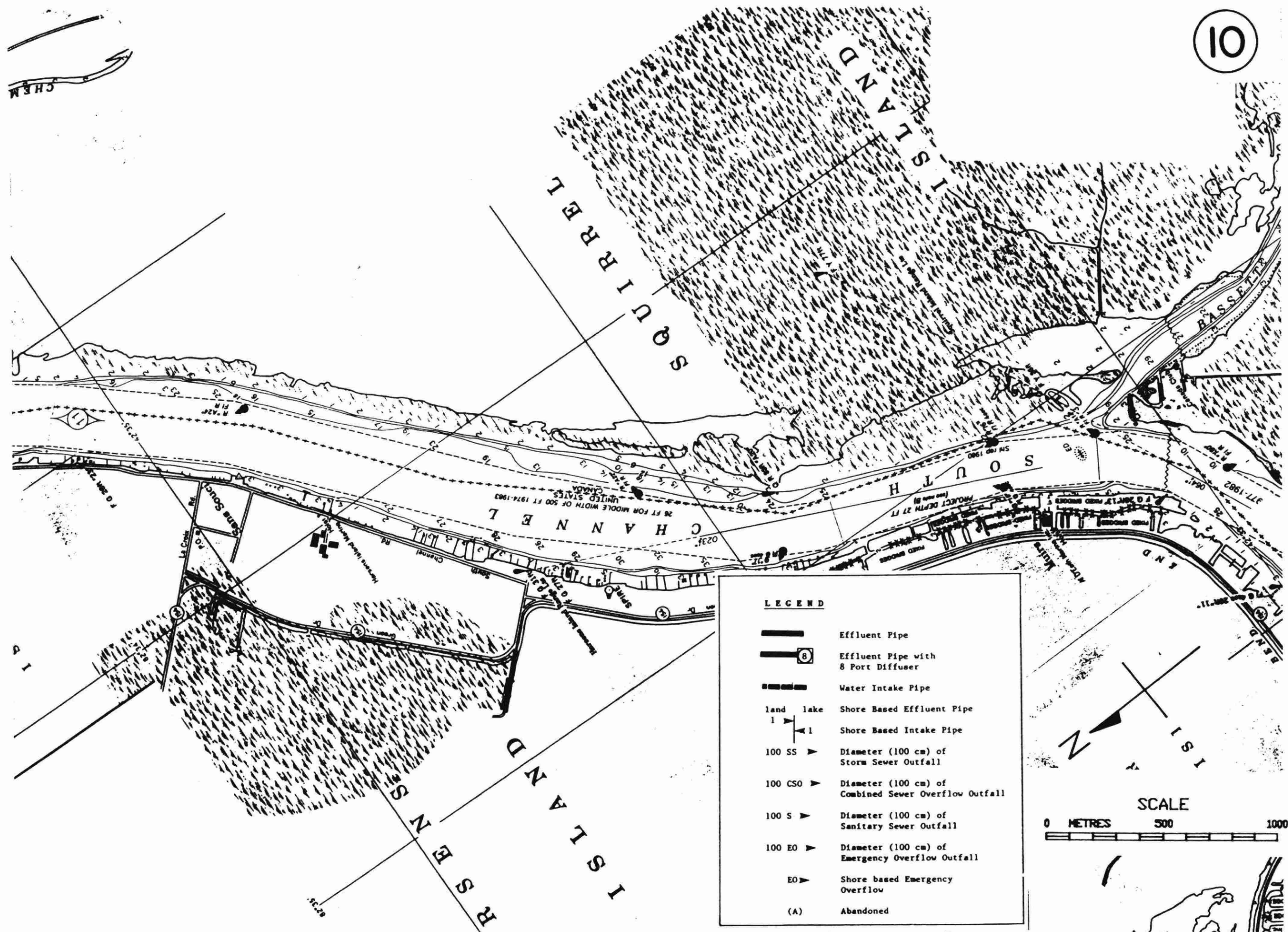
- Effluent Pipe
- Effluent Pipe with 8 Port Diffuser
- Water Intake Pipe
- Shore Based Effluent Pipe
- Shore Based Intake Pipe
- 100 SS > Diameter (100 cm) of Storm Sewer Outfall
- 100 CSO > Diameter (100 cm) of Combined Sewer Overflow Outfall
- 100 S > Diameter (100 cm) of Sanitary Sewer Outfall
- 100 EO > Diameter (100 cm) of Emergency Overflow Outfall
- EO > Shore based Emergency Overflow
- (A) Abandoned

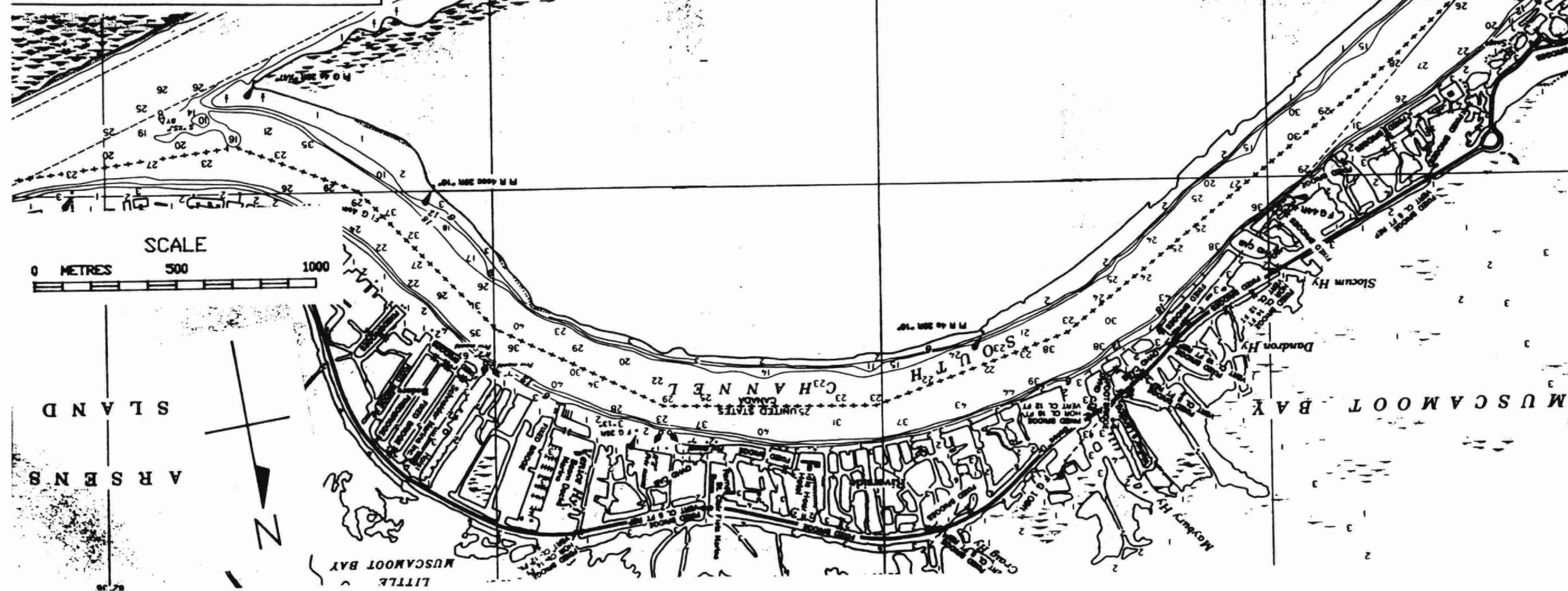
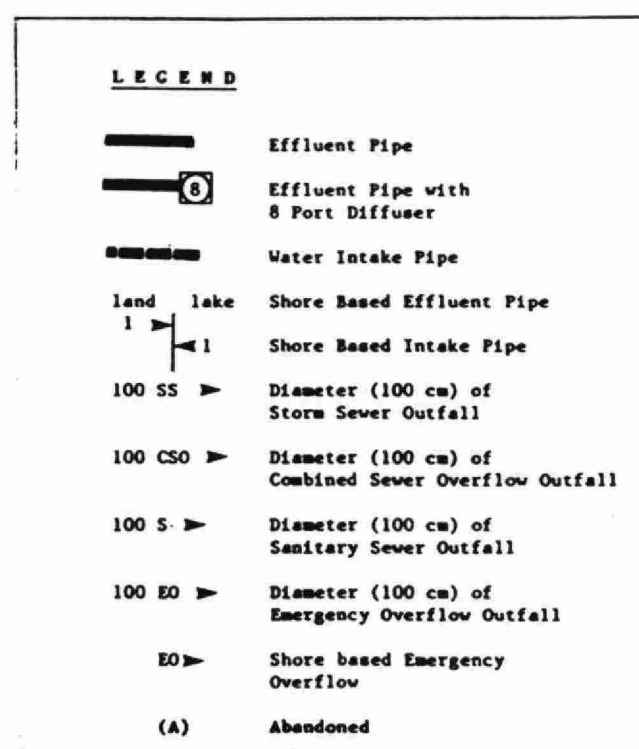


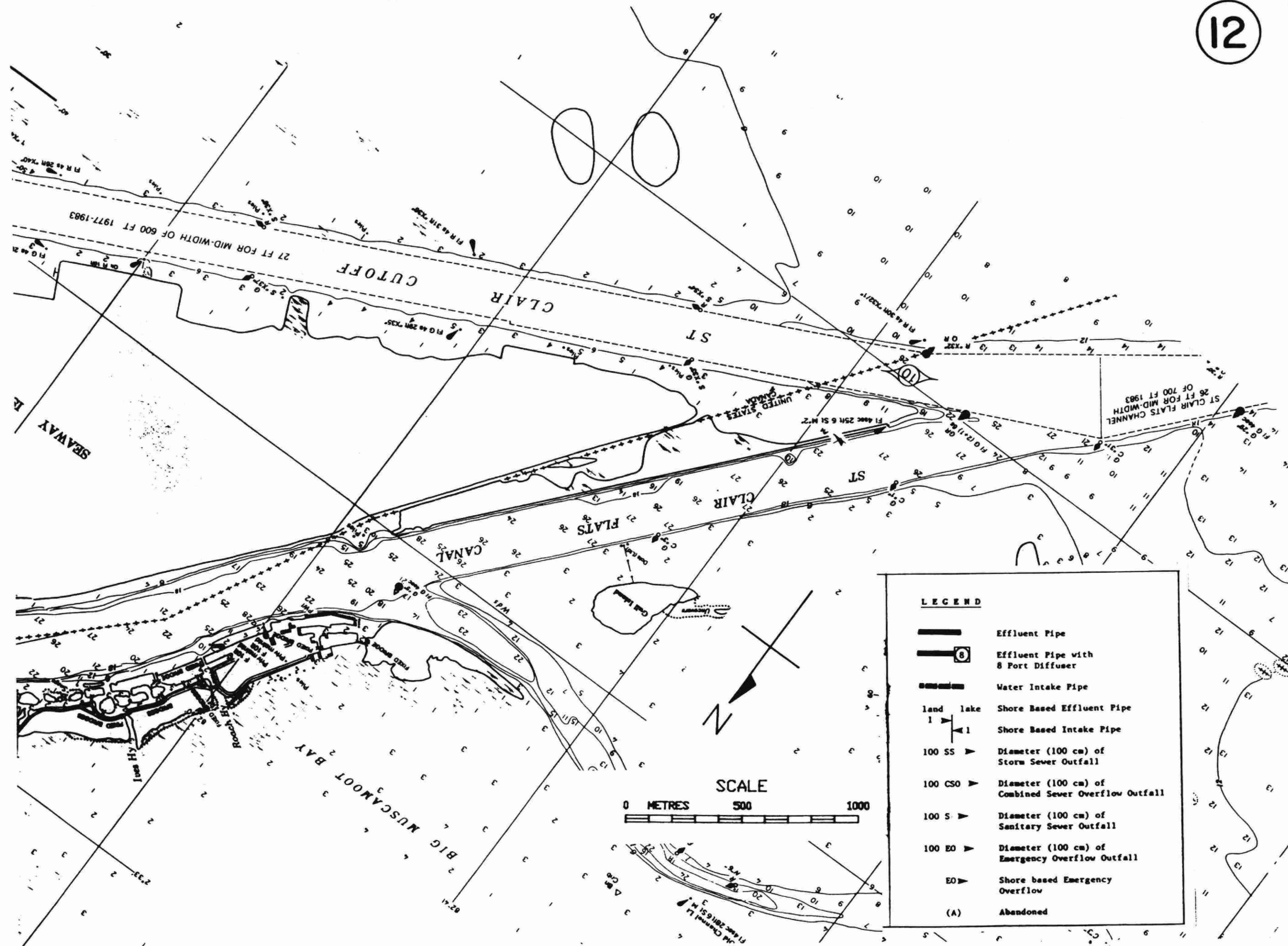
Name	Port Lampton WPCP						
Intake/Outfall	Outfall						
UMIS/IMIS No.	NA						
Structure No.	1						
Map Number	8						
Operating Authority	MOB						
Location	Port Lampton						
Supplier/Receiver	Marshy Creek						
Point of Discharge	River Mouth						
Terminal Basin	St. Clair River						
Activity	Municipal Sewage Treatment						
Process Type	Secondary Treatment						
Supply/Discharge Type	Batch (Seasonal)						
Treatment Type	Conventional Lagoon P Removal						
Comments							
Design Flow (1000m3/day)	1.08						
Mean Annual Flow (1000m3/day)	0.50						
Pipe length from shore (m)	0.00						
Pipe Diameter (cm)	30.48						
Water Depth at end of pipe (m)	NA						
Water depth above end of pipe (m)	0.00						
Diffuser	NO						
Number of ports							

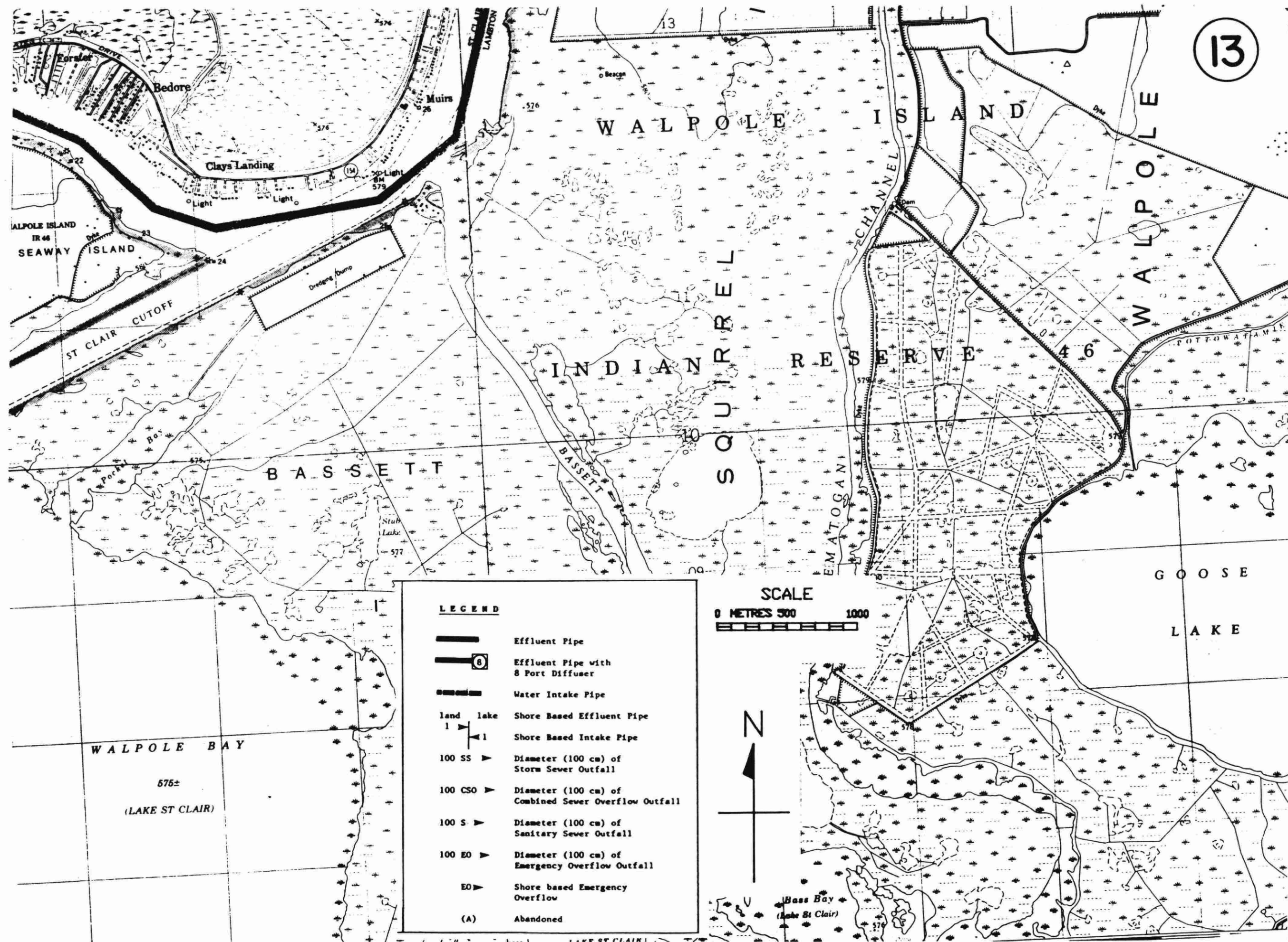




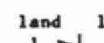
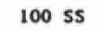
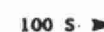
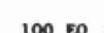






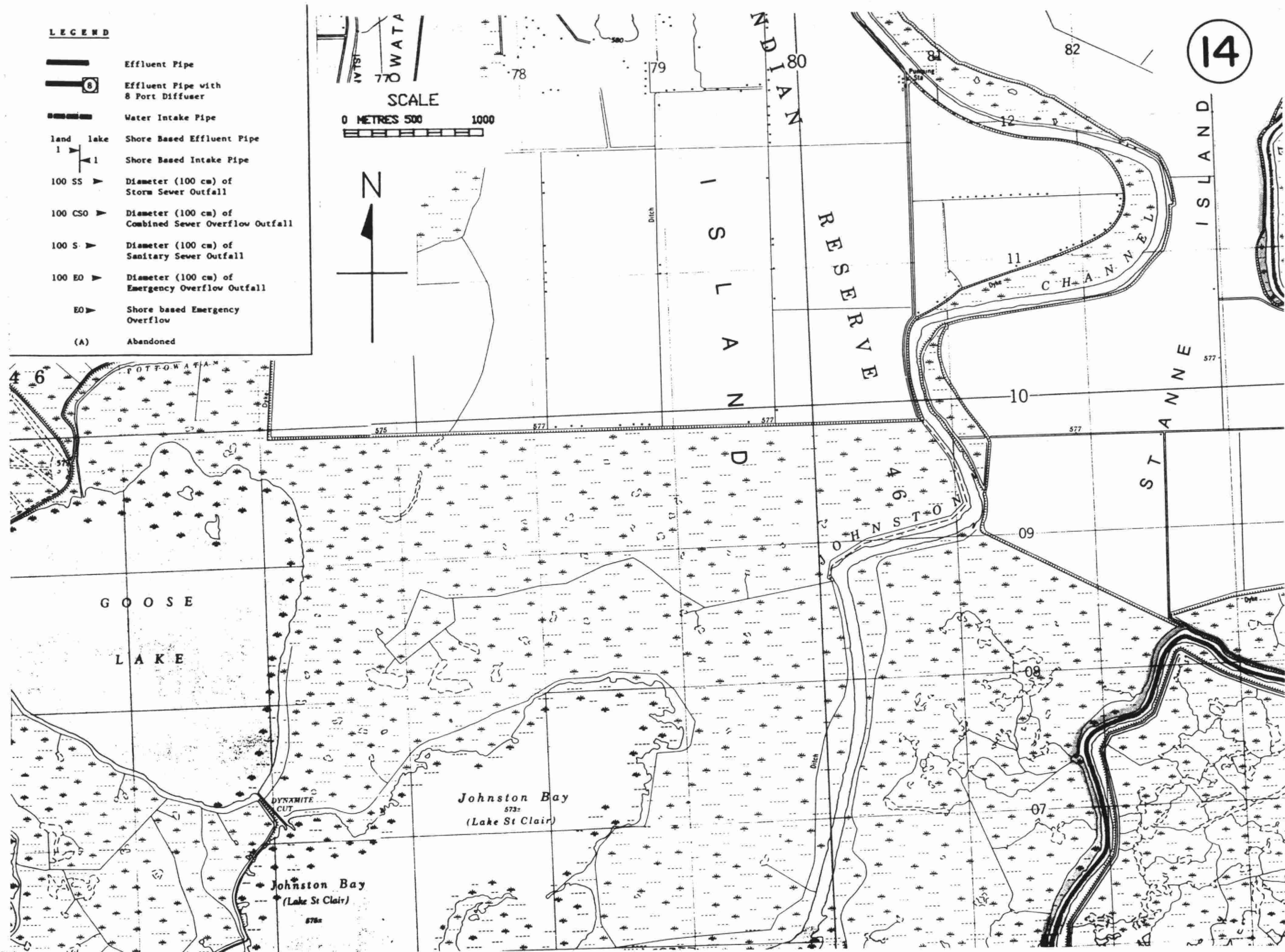


LEGEND

-  Effluent Pipe
-  Effluent Pipe with 8 Port Diffuser
-  Water Intake Pipe
- land lake  Shore Based Effluent Pipe
-  Shore Based Intake Pipe
- 100 SS  Diameter (100 cm) of Storm Sewer Outfall
- 100 CSO  Diameter (100 cm) of Combined Sewer Overflow Outfall
- 100 S  Diameter (100 cm) of Sanitary Sewer Outfall
- 100 EO  Diameter (100 cm) of Emergency Overflow Outfall
- EO  Shore based Emergency Overflow
- (A)  Abandoned

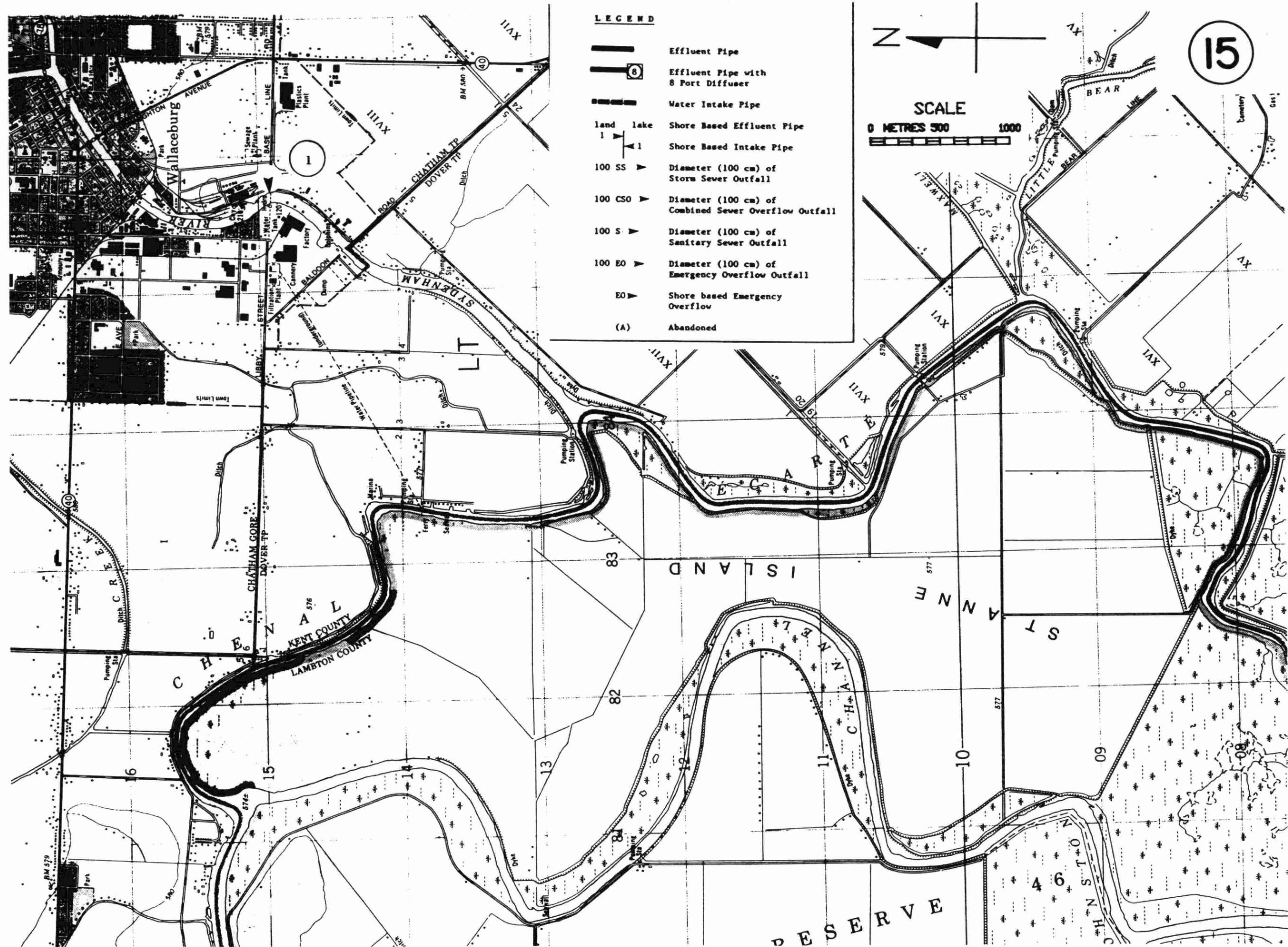
SCALE
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N



14

Name	Wallaceburg WPCP						
Intake/Outfall	Outfall						
DNIS/INIS No.	110000784						
Structure No.	1						
Map Number	15						
Operating Authority	MOE						
Location	Wallaceburg						
Supplier/Receiver	Sydenham River						
Point of Discharge	River Mouth						
Terminal Basin	Lake St. Clair						
Activity	Municipal Sewage Treatment						
Process Type	Secondary Treatment						
Supply/Discharge Type	Continuous						
Treatment Type	Activated Sludge P Removal						
Comments							
Design Flow (1000m3/day)	6.82						
Mean Annual Flow (1000m3/day)	8.87						
Pipe length from shore (m)	0.00						
Pipe Diameter (cm)	106.61						
Water Depth at end of pipe (m)	0.00						
Water depth above end of pipe (m)	0.00						
Diffuser	NO						
Number of ports							



LEGEND

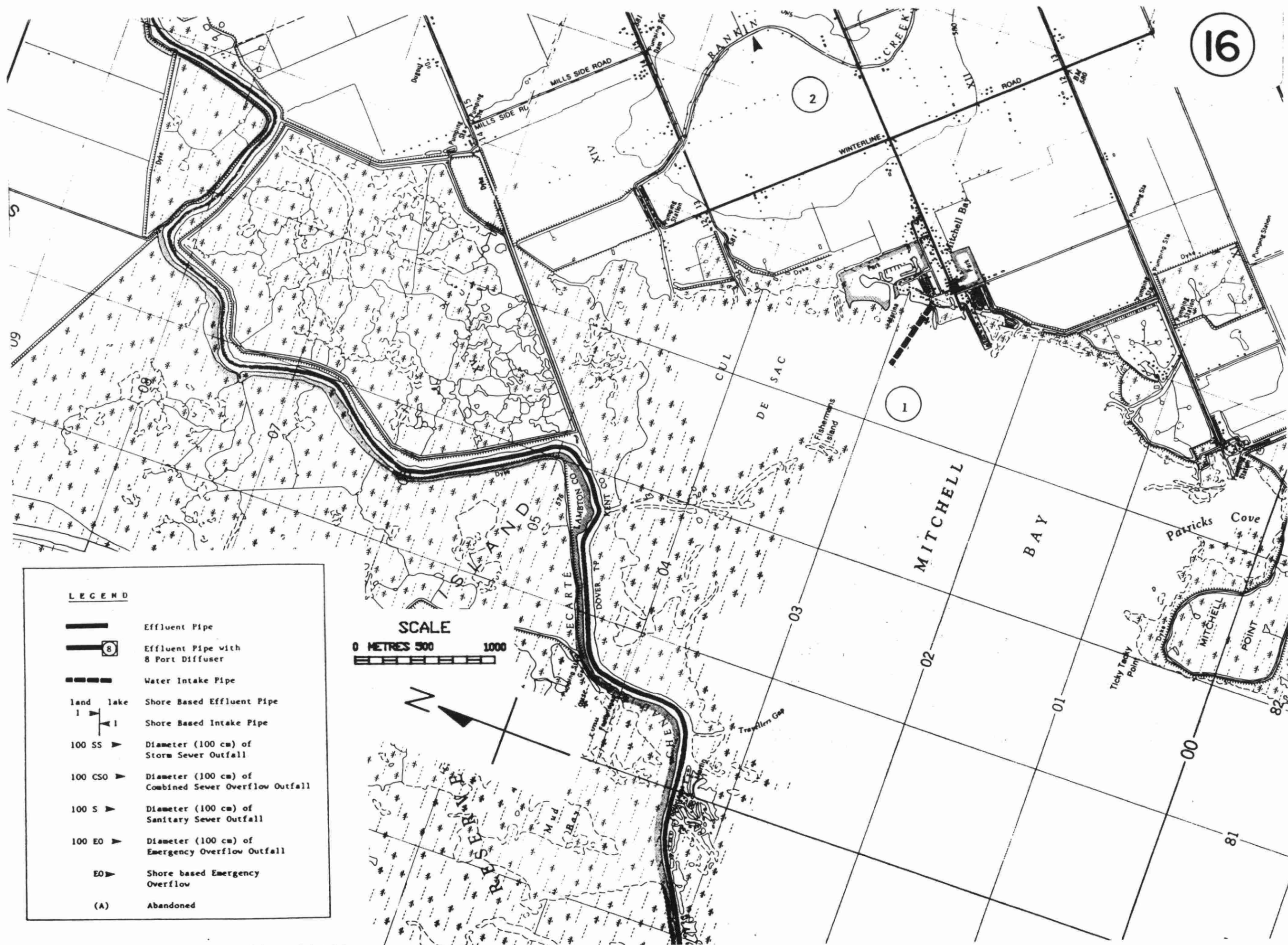
- Effluent Pipe
- Effluent Pipe with 8 Port Diffuser
- Water Intake Pipe
- Shore Based Effluent Pipe
- Shore Based Intake Pipe
- Diameter (100 cm) of Storm Sever Outfall
- Diameter (100 cm) of Combined Sever Overflow Outfall
- Diameter (100 cm) of Sanitary Sever Outfall
- Diameter (100 cm) of Emergency Overflow Outfall
- Shore based Emergency Overflow
- Abandoned

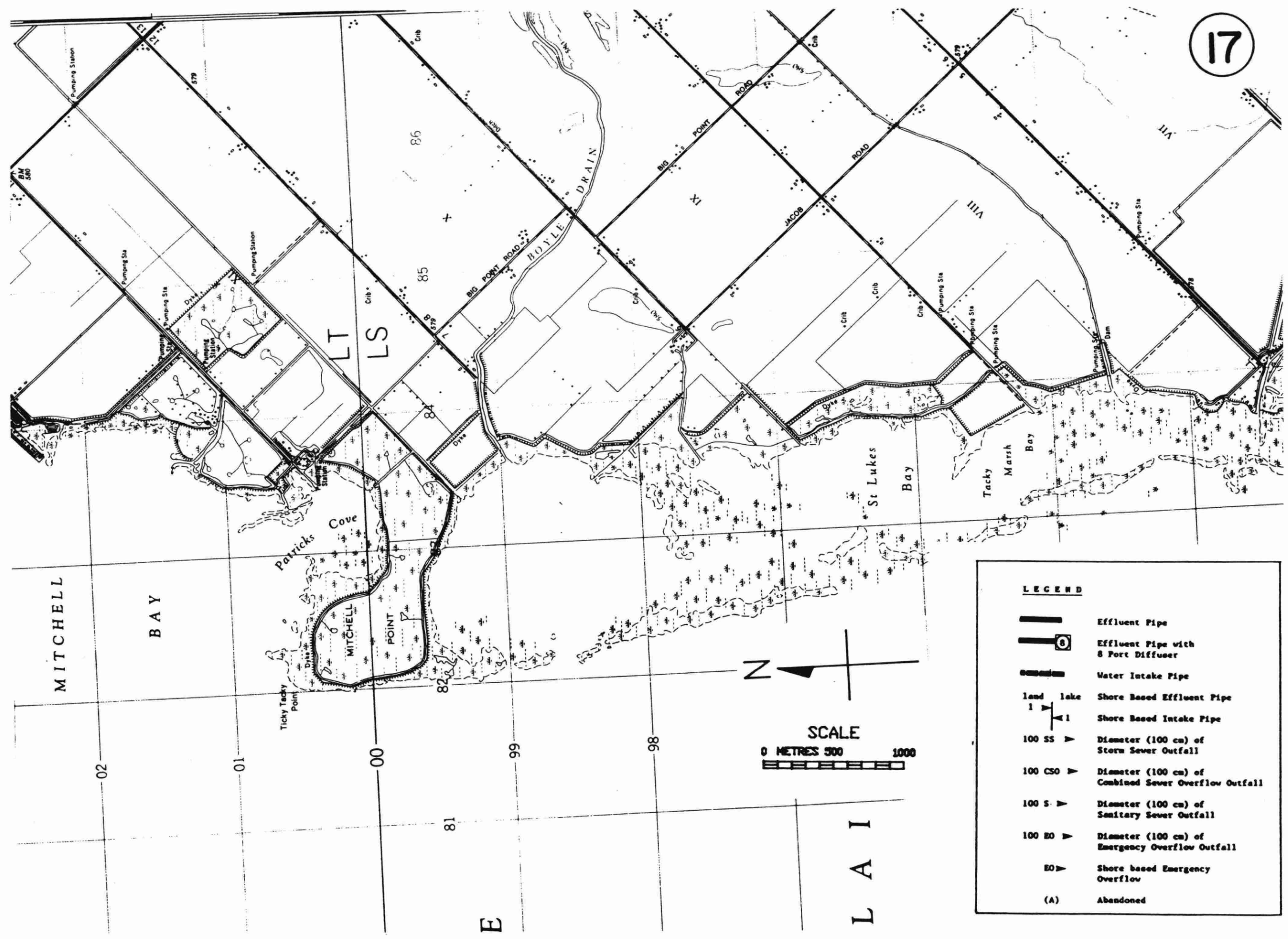
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DESERVE

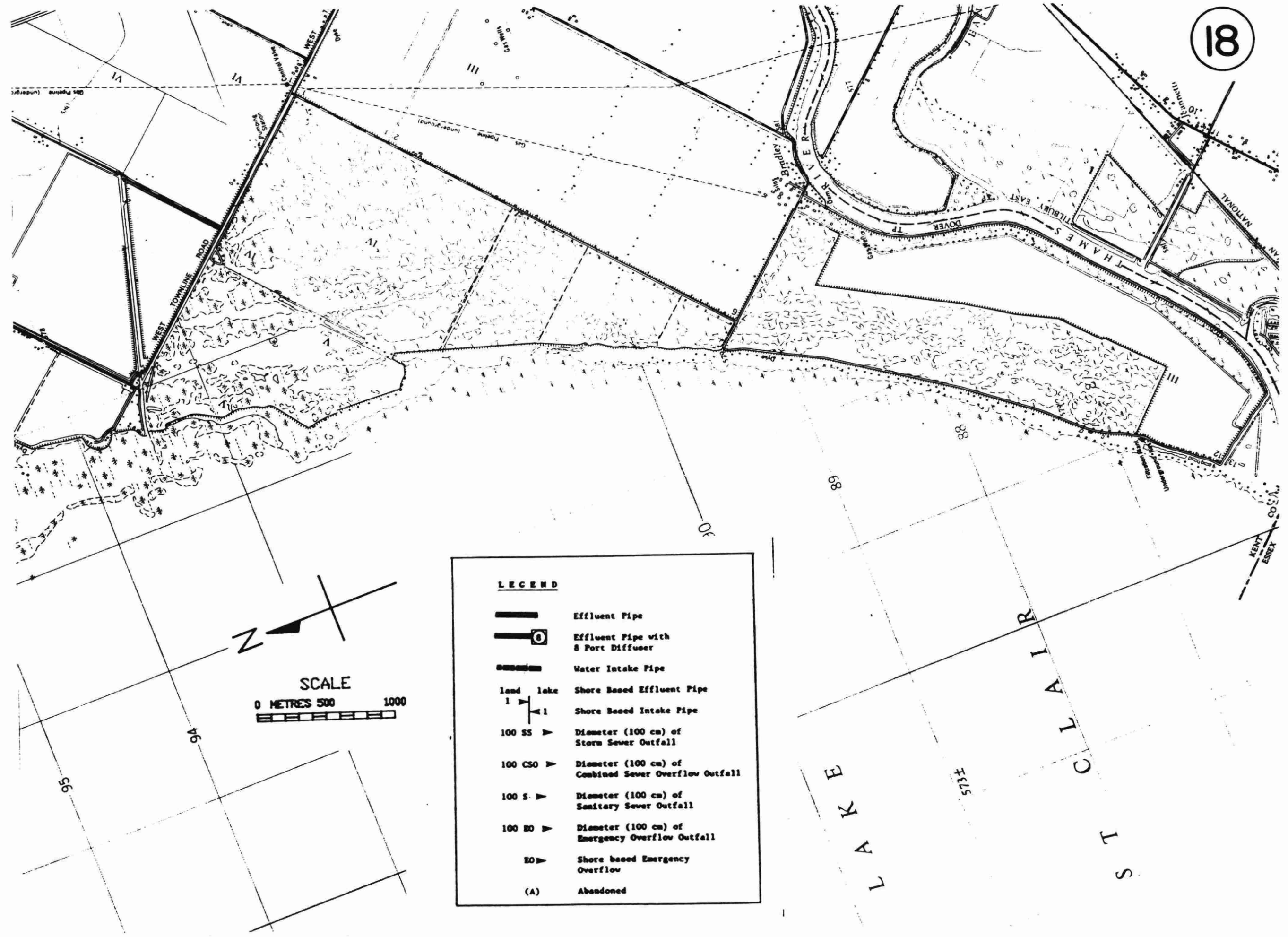
Name	Mitchells Bay WTP	Mitchells Bay WPCP					
Intake/Outfall	Intake	Outfall					
DNIS/IMIS No.	NA	110002087					
Structure No.	1	2					
Map Number	16	16					
Operating Authority	MOE	MOE					
Location	Dover TWP	Dover TWP					
Supplier/Receiver	Lake St. Clair	Rankin Creek					
Point of Discharge		River Mouth					
Terminal Basin	Lake St. Clair	Lake St. Clair					
Activity	Municipal Water Treatment	Municipal Sewage Treatment					
Process Type	Physical and Chemical Treatment	Secondary Treatment					
Supply/Discharge Type	Continuous	Batch (Seasonal)					
Treatment Type	Filtration, Coagulation Chlorination	Conventional Lagoon P Removal					
Comments							
Design Flow (1000m3/day)	1.09	0.51					
Mean Annual Flow (1000m3/day)	0.09	0.20					
Pipe length from shore (m)	519.91	0.00					
Pipe Diameter (cm)	4.64	40.64					
Water Depth at end of pipe (m)	1.93	0.00					
Water depth above end of pipe (m)	1.93	0.00					
Diffuser		NO					
Number of ports							





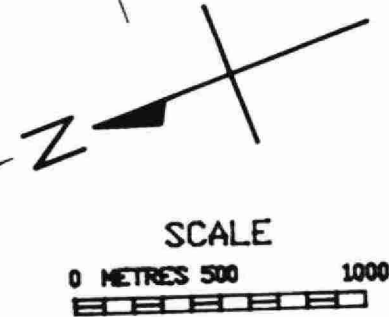
LEGEND

	Effluent Pipe
	Effluent Pipe with 8 Port Diffuser
	Water Intake Pipe
	Shore Based Effluent Pipe
	Shore Based Intake Pipe
	Diameter (100 cm) of Storm Sewer Outfall
	Diameter (100 cm) of Combined Sewer Overflow Outfall
	Diameter (100 cm) of Sanitary Sewer Outfall
	Diameter (100 cm) of Emergency Overflow Outfall
	Shore based Emergency Overflow
	Abandoned

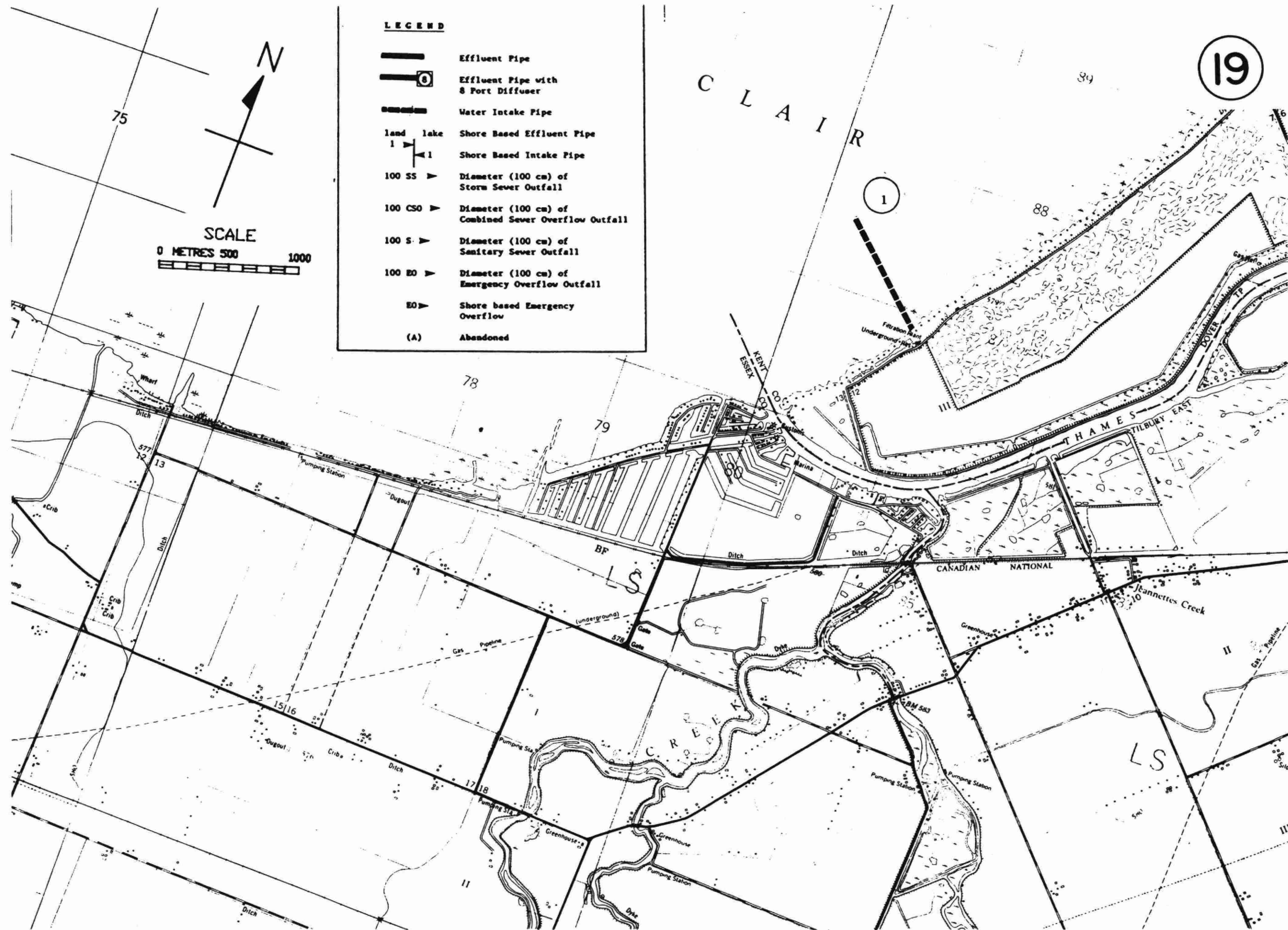


LEGEND

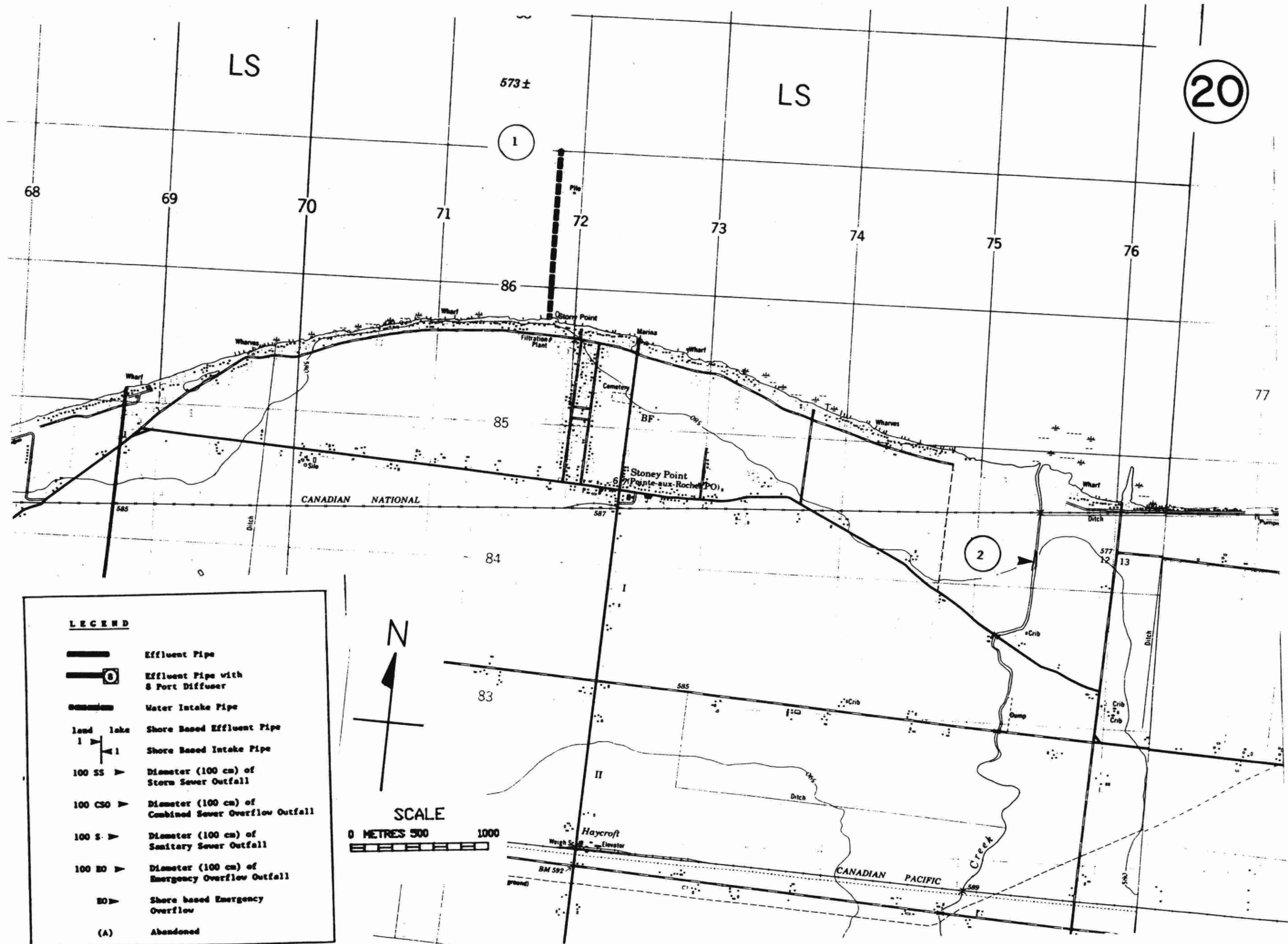
- Effluent Pipe
- Effluent Pipe with 8 Port Diffuser
- Water Intake Pipe
- Shore Based Effluent Pipe
- Shore Based Intake Pipe
- Diameter (100 cm) of Storm Sewer Outfall
- Diameter (100 cm) of Combined Sewer Overflow Outfall
- Diameter (100 cm) of Sanitary Sewer Outfall
- Diameter (100 cm) of Emergency Overflow Outfall
- Shore based Emergency Overflow
- Abandoned



Name	Tilbury WTP						
Intake/Outfall	Intake						
UNIS/INIS No.	220003350						
Structure No.	1						
Map Number	19						
Operating Authority	MUN						
Location	East of Stoney Point						
Supplier/Receiver	Lake St. Clair						
Point of Discharge							
Terminal Basin	Lake St. Clair						
Activity	Municipal Water Treatment						
Process Type	Physical and Chemical Treatment						
Supply/Discharge Type	Continuous						
Treatment Type	Filtration, Coagulation Chlorination Fluoridation						
Comments							
Design Flow (1000m3/day)	6.50						
Mean Annual Flow (1000m3/day)	0.89						
Pipe length from shore (m)	892.00						
Pipe Diameter (cm)	40.00						
Water Depth at end of pipe (m)	NA						
Water depth above end of pipe (m)	NA						
Diffuser							
Number of ports							

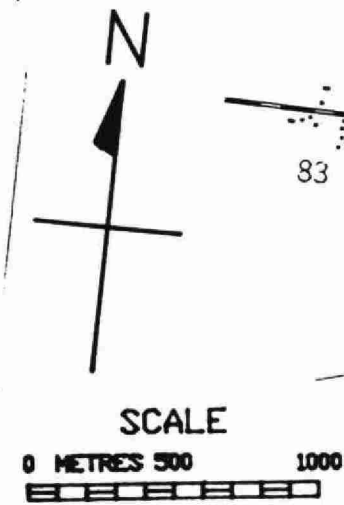


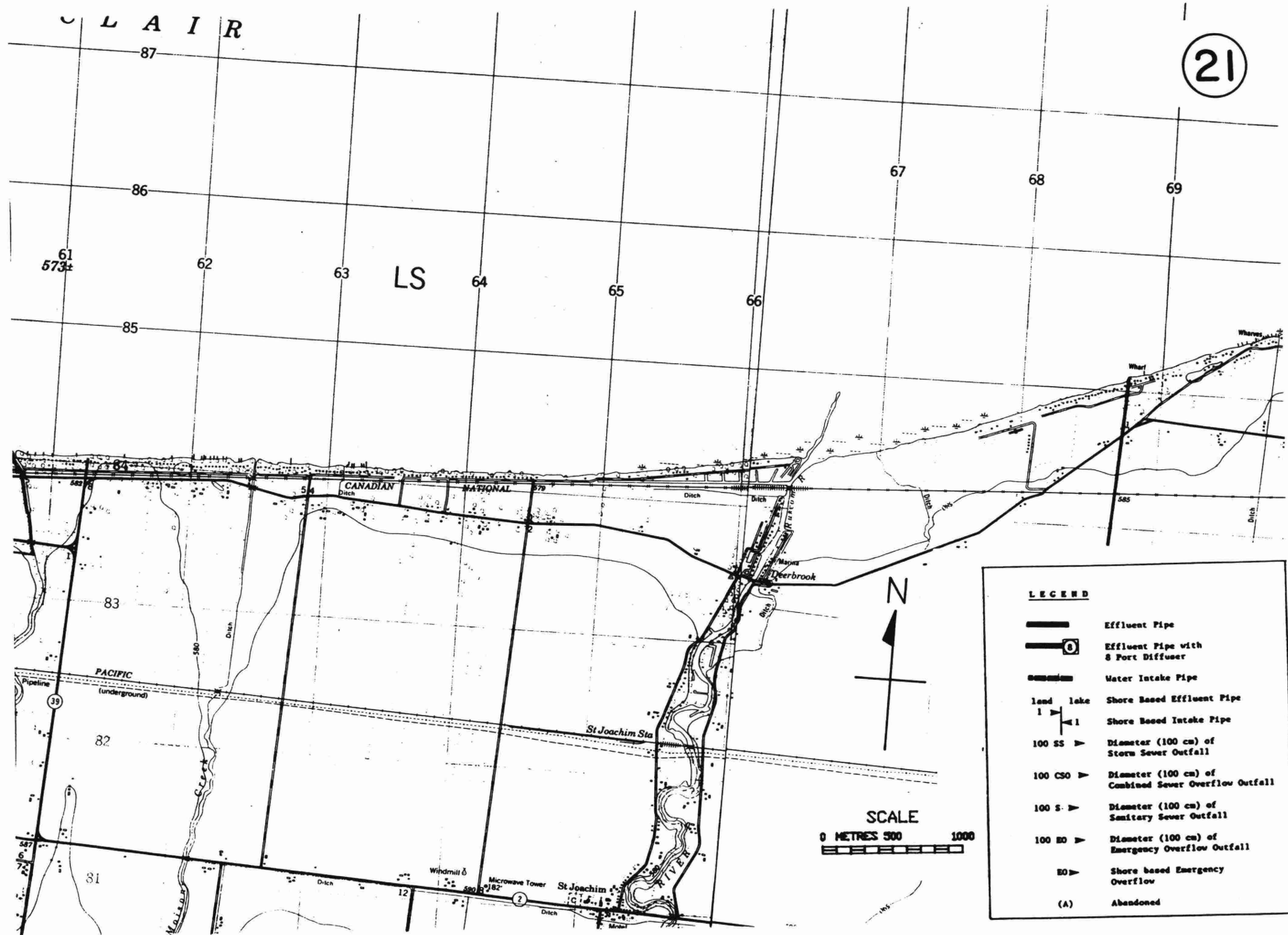
Name	Tilbury North WSS	Stoney Point WPCP					
Intake/Outfall	Intake	Outfall					
UNIS/INIS No.	220003396	110002345					
Structure No.	1	2					
Map Number	20	20					
Operating Authority	MUN	NOE					
Location	TWP of Tilbury North	Stoney Point					
Supplier/Receiver	Lake St. Clair	Little Creek					
Point of Discharge		River Mouth					
Terminal Basin	Lake St. Clair	Lake St. Clair					
Activity	Municipal Water Treatment	Municipal Sewage Treatment					
Process Type	Physical and Chemical	Secondary Treatment					
Supply/Discharge Type	Continuous	Batch (Seasonal)					
Treatment Type	Filtration, Coagulation Chlorination	Conventional Lagoon P Removal					
Comments							
Design Flow (1000m3/day)	4.50	0.96					
Mean Annual Flow (1000m3/day)	NA	1.20					
Pipe length from shore (m)	1220.00	0.00					
Pipe Diameter (cm)	60.00	45.72					
Water Depth at end of pipe (m)	4.50	0.00					
Water depth above end of pipe (m)	3.50	0.00					
Diffuser		NO					
Number of ports							



LEGEND

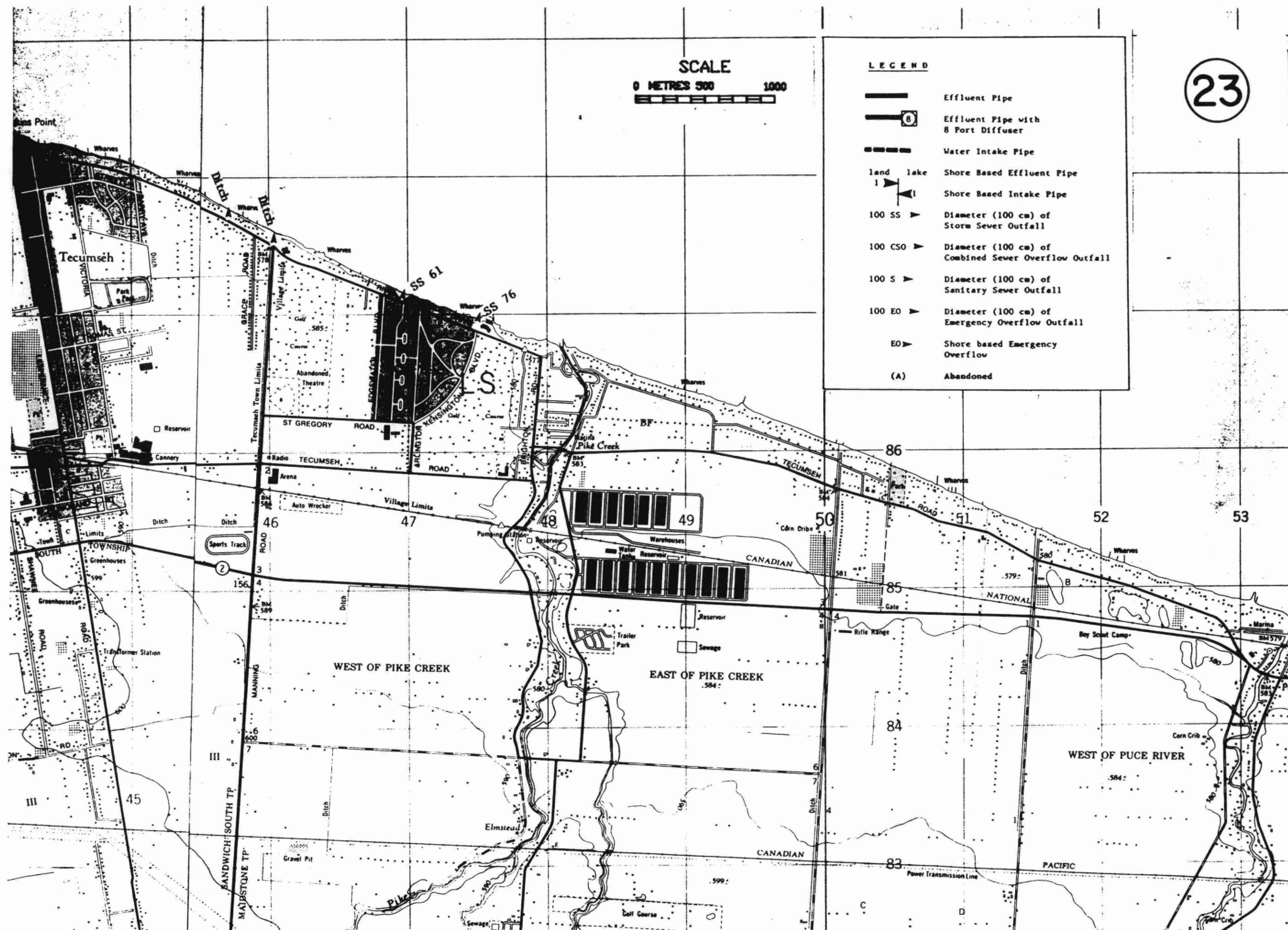
- Effluent Pipe
- Effluent Pipe with 8 Port Diffuser
- Water Intake Pipe
- land
- lake
- Shore Based Effluent Pipe
- Shore Based Intake Pipe
- 100 SS > Diameter (100 cm) of Storm Sewer Outfall
- 100 CSO > Diameter (100 cm) of Combined Sewer Overflow Outfall
- 100 S > Diameter (100 cm) of Sanitary Sewer Outfall
- 100 EO > Diameter (100 cm) of Emergency Overflow Outfall
- EO > Shore based Emergency Overflow
- (A) Abandoned



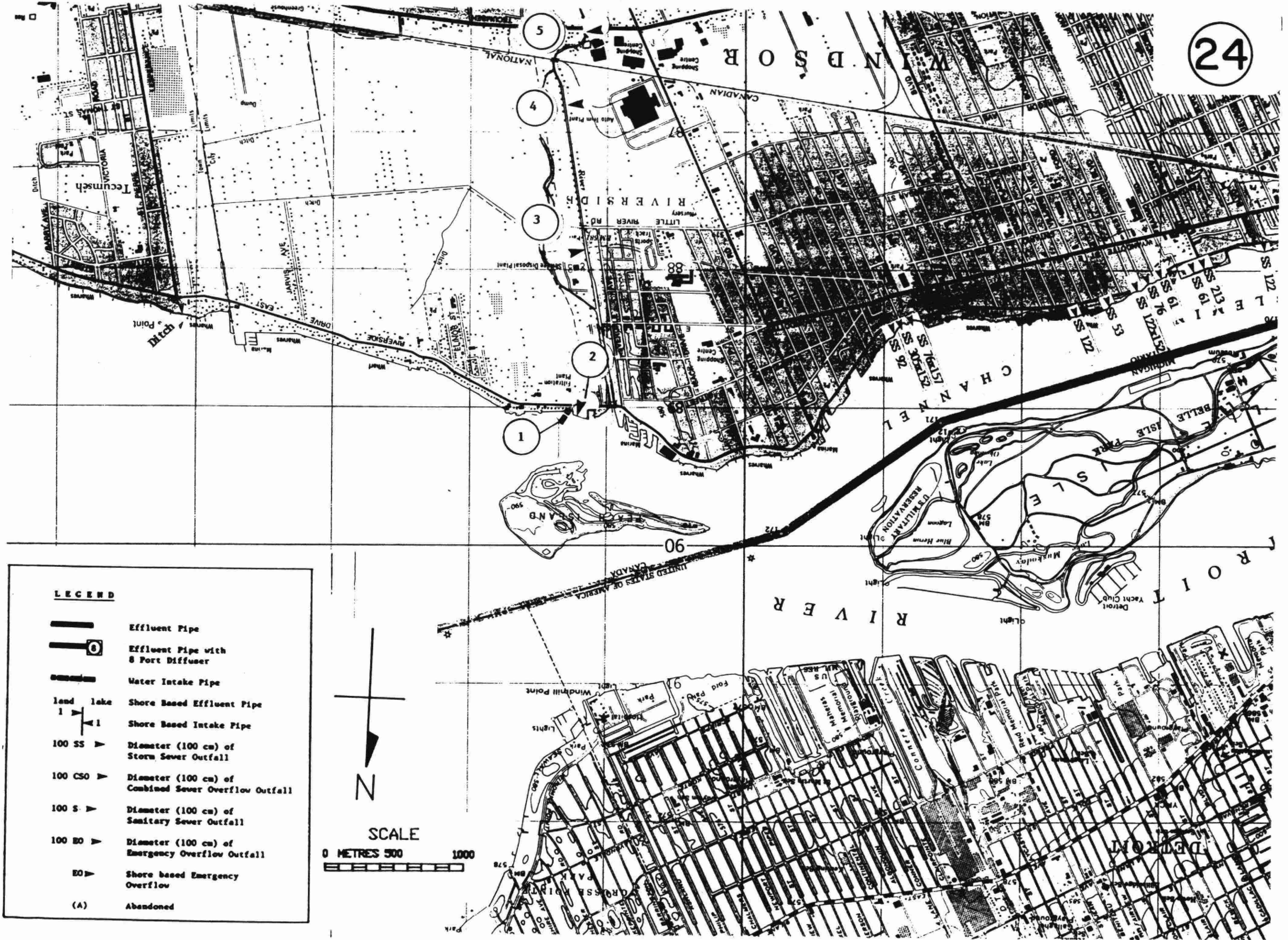


Name	Belle River WPCP	Belle River WTP	Belle River WTP				
Intake/Outfall	Outfall	Intake #1	Intake #2				
UMIS/INIS No.	110002078	220002412	220002412				
Structure No.	1	2	3				
Map Number	22	22	22				
Operating Authority	MOE	MOE	MOE				
Location	Belle River	Belle River	Belle River				
Supplier/Receiver	Lake St. Clair	Lake St. Clair	Lake St. Clair				
Point of Discharge	Offshore						
Terminal Basin	Lake St. Clair	Lake St. Clair	Lake St. Clair				
Activity	Municipal Sewage Treatment	Municipal Water Treatment	Municipal Water Treatment				
Process Type	Secondary Treatment	Physical and Chemical Treatment	Physical and Chemical Treatment				
Supply/Discharge Type	Continuous	Continuous	Continuous				
Treatment Type	Extended Aeration P Removal	Filtration, Coagulation Chlorination	Filtration, Coagulation Chlorination				
Comments							
Design Flow (1000m3/day)	6.82	18.18	18.18				
Mean Annual Flow (1000m3/day)	3.01	6.05	6.05				
Pipe length from shore (m)	563.80	548.65	548.65				
Pipe Diameter (cm)	91.00	40.64	91.44				
Water Depth at end of pipe (m)	3.04	2.13	2.16				
Water depth above end of pipe (m)	2.40	1.21	0.91				
Diffuser	YES						
Number of ports	16						



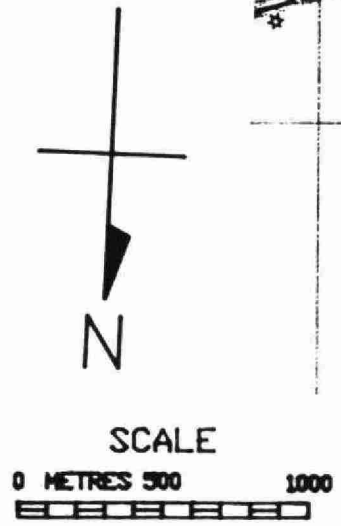


Name	Windsor Tecumseh WTP	Windsor Tecumseh WTP	Little River WPCP	General Motors Trim	Wickes Bumper Co. Ltd.		
Intake/Outfall	Intake	Intake	Outfall	Outfall	Outfall		
UMIS/IMIS No.	220003421	220003421	120001096	NA	000106003		
Structure No.	1	2	3	4	5		
Map Number	24	24	24	24	24		
Operating Authority	MUN	MUN	MUN	IND	IND		
Location	Windsor	Windsor	Windsor	Windsor	Windsor		
Supplier/Receiver	Lake St. Clair	Lake St. Clair	Detroit River	Little River	Little River		
Point of Discharge			Shore	River Mouth	River Mouth		
Terminal Basin	Detroit River	Detroit River	Detroit River	Detroit River	Detroit River		
Activity	Municipal Water Treatment	Municipal Water Treatment	Municipal Sewage Treatment	Automotive Trim Mfg.	Metal processing and production		
Process Type	Physical and Chemical Treatment	Physical and Chemical Treatment	Secondary Treatment	NA	Stamping & Electroplating; Nickel, Copper, Chrome Plating		
Supply/Discharge Type	Alum, Chlorine and Fluoridation	Alum, Chlorine and Fluoridation	Continuous Activated Sludge Clarification Chlorination	Continuous None	Continuous Chemical Destruction Lagoon for final settling. No treatment of cooling water.		
Comments	Plant Mothballed, not likely to be used again.	Plant Mothballed, not likely to be used again.		Process cooling and Stormwater outfall	Formerly Windsor Bumper Company. Two outfall pipes		
Design Flow (1000m3/day)	47.50	47.50	36.00	2.00	3.20		
Mean Annual Flow (1000m3/day)	NA	NA	45.00	0.40	1.15		
Pipe length from shore (m)	100.00	25.00	1.00	0.00	1.00		
Pipe Diameter (cm)	90.00	70.00	122.00	122.00	20.00		
Water Depth at end of pipe (m)	2.00	2.00	1.50	3.00	3.00		
Water depth above end of pipe (m)	NA	NA	0.50	1.00	0.00		
Diffuser			NO	NO	NO		
Number of ports							

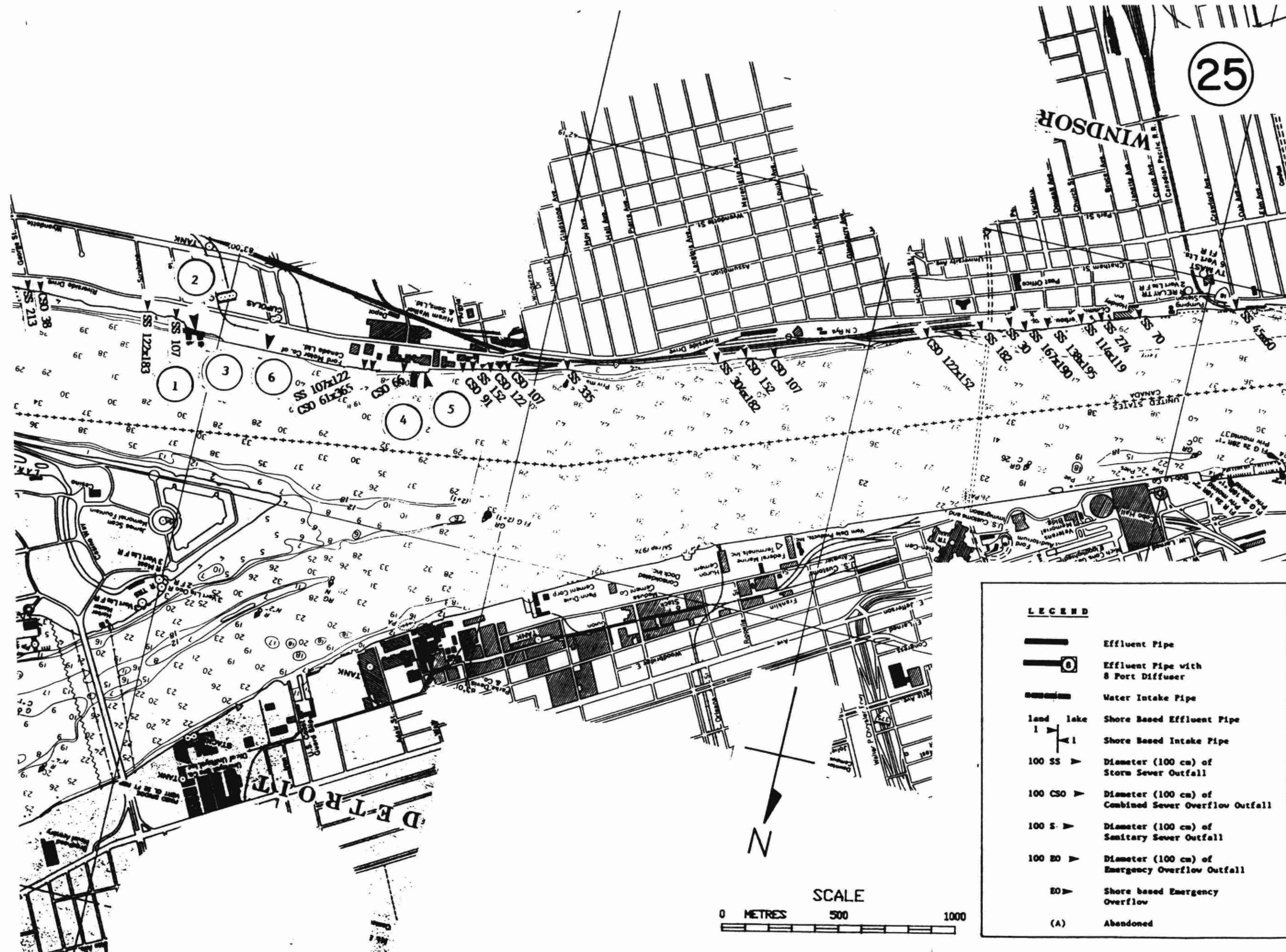


LEGEND

-  Effluent Pipe
-  Effluent Pipe with 8 Port Diffuser
-  Water Intake Pipe
-  Shore Based Effluent Pipe
-  Shore Based Intake Pipe
-  100 SS > Diameter (100 cm) of Storm Sewer Outfall
-  100 CSO > Diameter (100 cm) of Combined Sewer Overflow Outfall
-  100 S > Diameter (100 cm) of Sanitary Sewer Outfall
-  100 EO > Diameter (100 cm) of Emergency Overflow Outfall
-  EO > Shore based Emergency Overflow
-  (A) Abandoned



Name	Windsor PUC WTP	Windsor PUC WTP	Windsor PUC WTP	Hiram Walker & Sons Ltd	Hiram Walker & Sons Ltd	Ford Motor Co.
Intake/Outfall	Intake	Outfall	Intake	Outfall	Intake	Outfall
UMIS/INIS No.	220003421	220003421	220003421	NA	NA	0000020107
Structure No.	1	2	3	4	5	6
Map Number	25	25	25	25	25	25
Operating Authority	MUN PUC	MUN PUC	MUN PUC	IND	IND	IND
Location	Windsor	Windsor	Windsor	Windsor	Windsor	Windsor
Supplier/Receiver	Detroit River	Detroit River	Detroit River	Detroit River	Detroit River	Detroit River
Point of Discharge		Shore		Shore		Shore
Terminal Basin	Detroit River	Detroit River	Detroit River	Detroit River	Detroit River	Detroit River
Activity	Municipal Water Treatment	Municipal Water Treatment	Municipal Water Treatment	Production of food related products	Production of food related products	Manufacturing of Automobile parts
Process Type	Physical and Chemical Treatment	None	Physical and Chemical Treatment	Manufacturing of Beverage Alcohol	Manufacturing of Beverage Alcohol	Foundry for engine blocks etc;
Supply/Discharge Type	Continuous	Batch	Continuous	Seasonal/continuous	Seasonal/continuous	Continuous
Treatment Type	Filtration, Coagulation Chlorination Fluoridation	None	Filtration, Coagulation Chlorination Fluoridation	None	None	Settling, precipitation, Decant, Copola Type
Comments	Water Intake Stand-by.	Filter Backwash effluent		Flows are total annual volumes, number of days per year vary with production requirements.	Flows are total annual volumes, number of days per year vary with production requirements.	
Design Flow (1000m3/day)	270.00	NA	227.00	115.00	165.00	50.00
Mean Annual Flow (1000m3/day)	220.00	NA	272.00	1440.00	5260.00	50.00
Pipe length from shore (m)	60.00	0.00	60.00	60.96	0.00	0.00
Pipe Diameter (cm)	135.00	75.00	150.00	122.00	137.16	213.00
Water Depth at end of pipe (m)	10.00	2.00	10.00	11.28	4.88	6.70
Water depth above end of pipe (m)	NA	NA	NA	9.79	3.66	0.30
Diffuser		NO				NO
Number of ports						

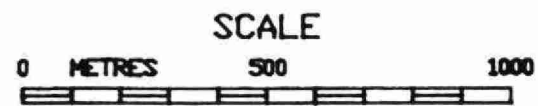


Name	Canadian Salt Co.	Canadian Salt Co.				
Intake/Outfall	Intake	Outfall				
OMIS/INIS No.	NA	NA				
Structure No.	1	2				
Map Number	26	26				
Operating Authority	IND	IND				
Location	Windsor	Windsor				
Supplier/Receiver	Detroit River	Detroit River				
Point of Discharge						
Terminal Basin	Detroit River	Detroit River				
Activity	Salt Processing	Salt Processing				
Process Type	NA	NA				
Supply/Discharge Type	Continuous	Continuous				
Treatment Type	None	None				
Comments		Condensor Water				
Design Flow (1000m3/day)	27.81	26.82				
Mean Annual Flow (1000m3/day)	7.03	7.30				
Pipe length from shore (m)	12.20	1.50				
Pipe Diameter (cm)	91.00	91.00				
Water Depth at end of pipe (m)	3.65	1.80				
Water depth above end of pipe (m)	2.43	NA				
Diffuser		NO				
Number of ports						

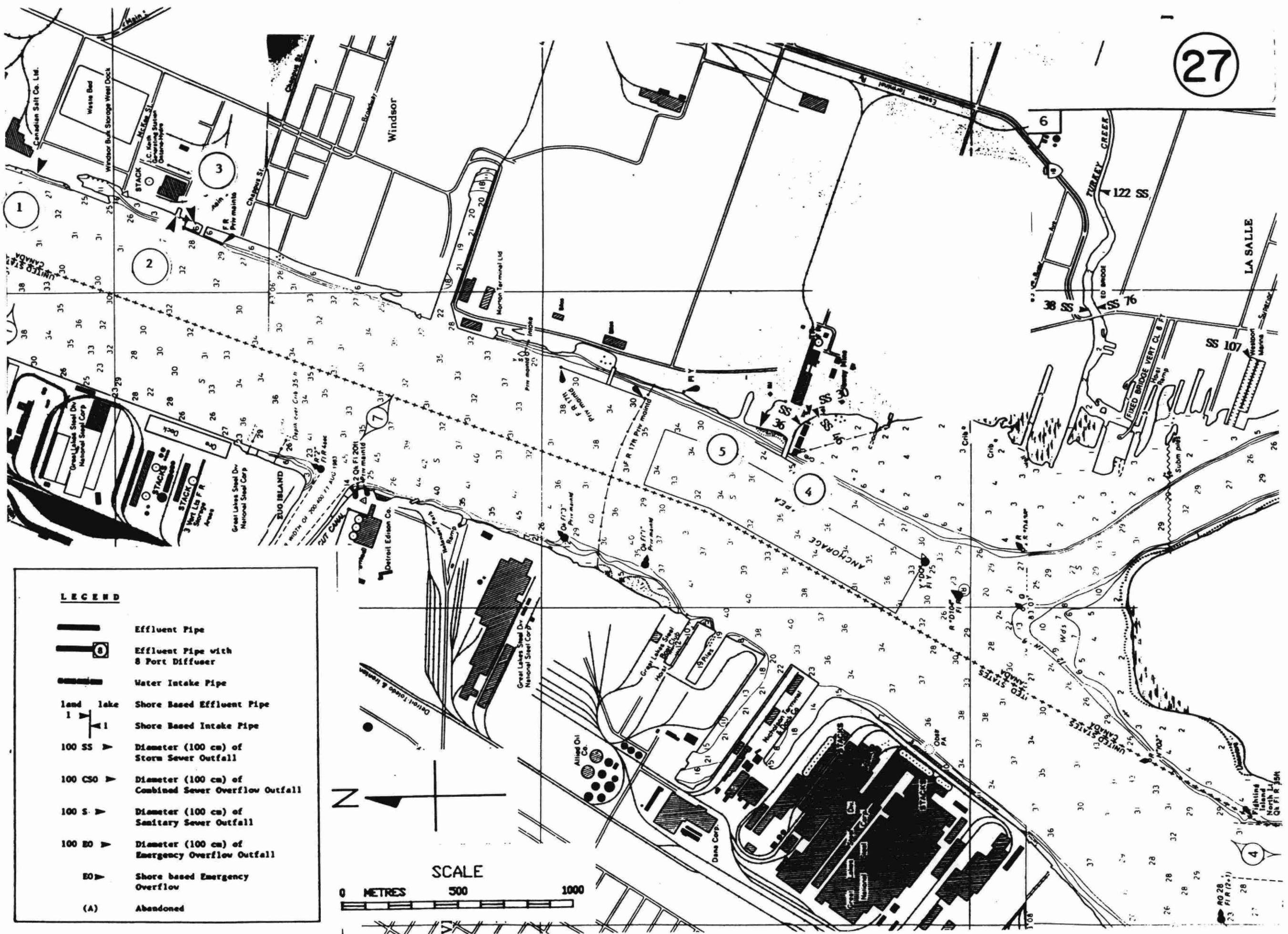


LEGEND

- Effluent Pipe
- Effluent Pipe with 8 Port Diffuser
- Water Intake Pipe
- Shore Based Effluent Pipe
- Shore Based Intake Pipe
- Diameter (100 cm) of Storm Sewer Outfall
- Diameter (100 cm) of Combined Sewer Overflow Outfall
- Diameter (100 cm) of Sanitary Sewer Outfall
- Diameter (100 cm) of Emergency Overflow Outfall
- Shore based Emergency Overflow
- Abandoned

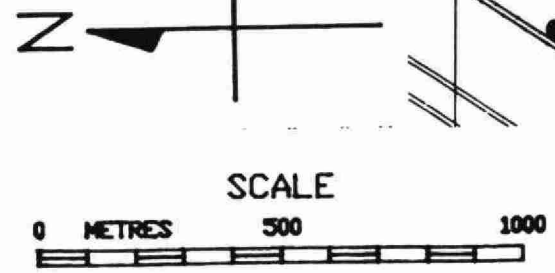


Name	Windsor WPCP	J. C. Keith TGS	J. C. Keith TGS	Canadian Salt Co.	Canadian Salt Co.		
Intake/Outfall	Outfall	Intake	Outfall	Intake	Outfall		
UMIS/IMIS No.	120001103	NA	NA	NA	NA		
Structure No.	1	2	3	4	5		
Map Number	27	27	27	27	27		
Operating Authority	MUN	Ontario Hydro	Ontario Hydro	IND	IND		
Location	Windsor	Windsor	Windsor	Windsor	Windsor		
Supplier/Receiver	Detroit River	Detroit River	Detroit River	Detroit River	Detroit River		
Point of Discharge	Shore		Shore				
Terminal Basin	Detroit River	Detroit River	Detroit River	Detroit River	Detroit River		
Activity	Municipal Sewage Treatment	Electricity generation facility	Electricity generation facility	Rock Salt Mine	Salt Processing		
Process Type	Primary Treatment	Coal fired thermal generation plant	Coal fired thermal generation plant	NA	NA		
Supply/Discharge Type	Continuous	Continuous	Continuous	Continuous	Continuous		
Treatment Type	Screening, Grit Removal P Removal, Physical and Sludge Removal	Bar Racks Vaertical Travelling Screens	Filtration By Bar racks & Screens	None	None		
Comments		Plant Mothballed. Intake structure is a channel	Plant Mothballed. Outfall structure is a channel		Main sewer water		
Design Flow (1000m3/day)	163.00	1209.60	1209.00	NA	5.45	5.45	
Mean Annual Flow (1000m3/day)	125.00	NA	NA	5.45	NA		
Pipe length from shore (m)	0.00	14.10	16.40	128.00	0.00		
Pipe Diameter (cm)	274.00	2280.00	800.00	76.20	NA		
Water Depth at end of pipe (m)	4.00	6.40	6.40	5.50	NA		
Water depth above end of pipe (m)	1.00	6.40	4.30	NA	NA		
Diffuser	NO		NO		NO		
Number of ports							



LEGEND

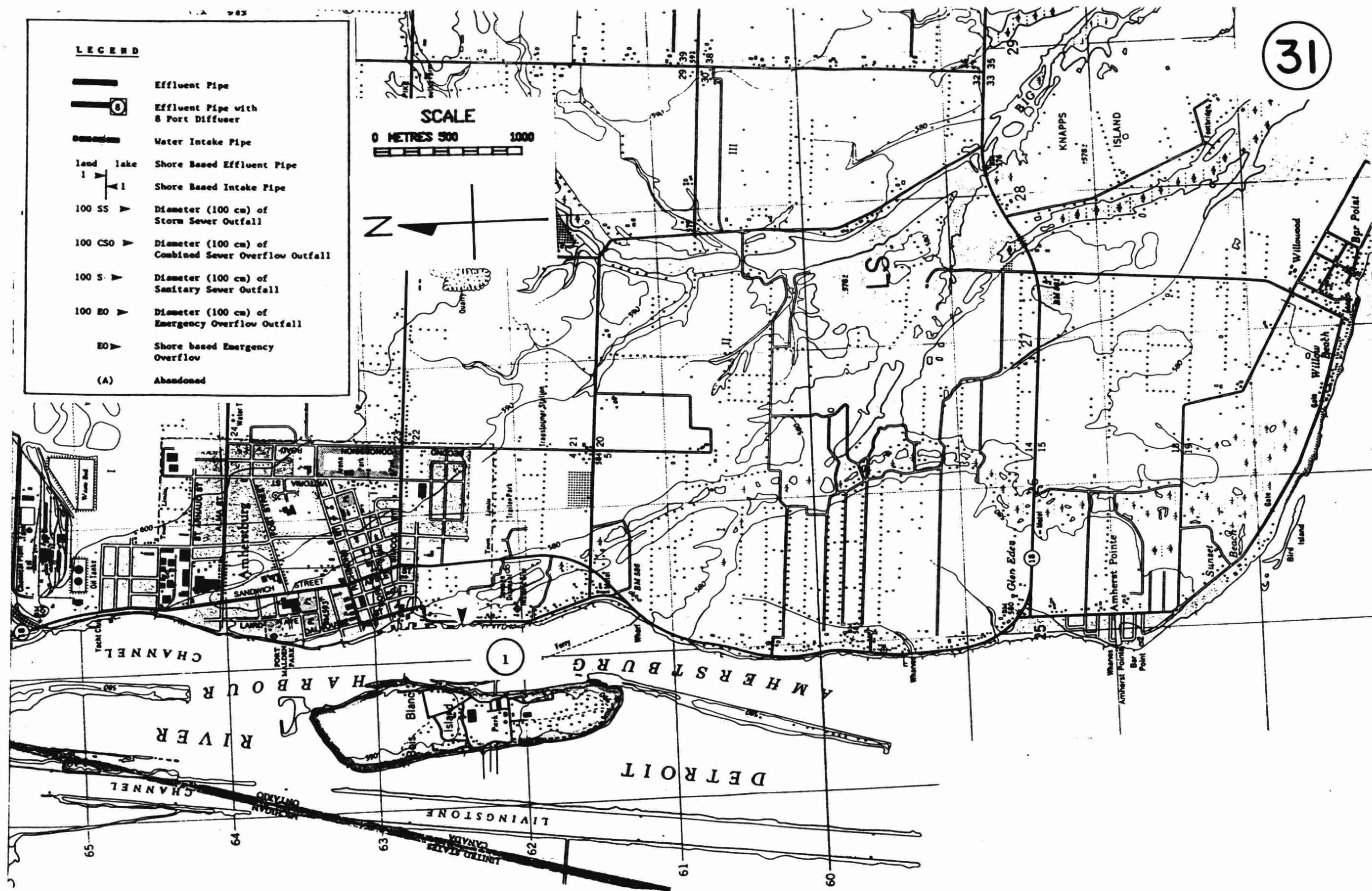
-  Effluent Pipe
-  Effluent Pipe with 8 Port Diffuser
-  Water Intake Pipe
-  Shore Based Effluent Pipe
-  Shore Based Intake Pipe
-  Diameter (100 cm) of Storm Sewer Outfall
-  Diameter (100 cm) of Combined Sewer Overflow Outfall
-  Diameter (100 cm) of Sanitary Sewer Outfall
-  Diameter (100 cm) of Emergency Overflow Outfall
-  Shore based Emergency Overflow
-  Abandoned



Name	Edgewater Beach WPCP					
Intake/Outfall	Outfall					
UNIS/INIS No.	110002407					
Structure No.	1					
Map Number	29					
Operating Authority	MOE					
Location	Anderdon TWP					
Supplier/Receiver	Detroit River					
Point of Discharge	Offshore					
Terminal Basin	Detroit River					
Activity	Municipal Sewage Treatment					
Process Type	Secondary Treatment					
Supply/Discharge Type	Batch (Seasonal)					
Treatment Type	Conventional Lagoon Seasonal P Removal					
Comments						
Design Flow (1000m3/day)	1.61					
Mean Annual Flow (1000m3/day)	0.49					
Pipe length from shore (m)	190.00					
Pipe Diameter (cm)	30.50					
Water Depth at end of pipe (m)	4.40					
Water depth above end of pipe (m)	4.40					
Diffuser	NO					
Number of ports						

Name	Amherstburg WSS	The Segrain Co. Ltd.	The Segrain Co. Ltd.	General Chemical	General Chemical		
Intake/Outfall	Intake	Intake	Outfall	Intake	Outfall		
UMIS/INIS No.	210000149	NA	NA	0000010009	0000010009		
Structure No.	1	2	3	4	5		
Map Number	30	30	30	30	30		
Operating Authority	MOR	IND	IND	IND	IND		
Location	Amherstburg	Amherstburg	Amherstburg	Amherstburg	Amherstburg		
Supplier/Receiver	Detroit River	Detroit River	Detroit River	Detroit River	Detroit River		
Point of Discharge			Offshore		Shore		
Terminal Basin	Detroit River	Detroit River	Detroit River	Detroit River	Detroit River		
Activity	Municipal Water Treatment	Processing of related food products	Processing of related food products	Chemical Manufacturing	Chemical Manufacturing		
Process Type	Physical and Chemical Treatment	Production and bottling of beverage alcohol	Cooling & rain water of beverage alcohol	Production of Soda Ash	Production of Soda Ash		
Supply/Discharge Type	Continuous	Continuous	Continuous	Continuous	Continuous		
Treatment Type	Filtration, Coagulation Chlorination, Fluoridation	None	None	Soda Ash, Calcium Alum & Chlorine	Precipitation, Settling Decant Overflow		
Comments		Cooling Water. Not required since 1983 production shutdown	Cooling Water. Not required since 1983 production shutdown	Raw & Process Water			
Design Flow (1000m3/day)	18.18	13.10	NA	150.00	150.00		
Mean Annual Flow (1000m3/day)	7.79	13.10	NA	135.00	135.00		
Pipe length from shore (m)	61.00	61.00	36.60	0.00	0.00		
Pipe Diameter (cm)	91.44	61.00	107.70	365.00	365.00		
Water Depth at end of pipe (m)	6.40	5.60	1.50	6.70	6.70		
Water depth above end of pipe (m)	4.60	5.00	0.42	0.61	0.61		
Diffuser			NO		NO		
Number of ports							

Name	Amherstburg WPCP						
Intake/Outfall	Outfall						
UNIS/INIS No.	120001087						
Structure No.	1						
Map Number	31						
Operating Authority	MUN						
Location	Amherstburg						
Supplier/Receiver	Lake Erie/Detroit River						
Point of Discharge	Shore						
Terminal Basin	Lake Erie						
Activity	Municipal Sewage Treatment						
Process Type	Primary Treatment						
Supply/Discharge Type	Continuous						
Treatment Type	Grit Removal, Sedimentation, Ferric Chloride P Removal-Continuous						
Comments	Plant upgrading completed in 1985						
Design Flow (1000m3/day)	7.70						
Mean Annual Flow (1000m3/day)	8.90						
Pipe length from shore (m)	15.00						
Pipe Diameter (cm)	183.00						
Water Depth at end of pipe (m)	3.68						
Water depth above end of pipe (m)	1.83						
Diffuser	NO						
Number of ports							





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TD/223.3/C43/Vol.IV/MOE